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MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING •

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

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FLASHES AND PLUGS

I.O.U.'s. Associated Press Writer Wayne Oliver asks:

"Did you ever find a long distance call on your telephone bill that you couldn't account for—only to discover a weekend guest had made it without saying anything about it?

" 'Such unauthorized calls are relatively rare,' says American Telephone & Telegraph Co. 'But they turn up.'

"There is the case of the lady burglar who broke into a Baltimore, Md., apartment and ran up a $75 bill on a call to Paris before being cut off.

"Then there was the father in Charleston, W. Va., who had ordered a telephone installed. When he returned from work he was told by his two young children the telephone was in and operating.

" 'It works fine,' they told him. 'We've spent all day talking to other people who have telephones, even people who live way far away.'

"It's well known that folks often get a yen to make long distance calls when they've had a couple too many, and a lady customer in a Connecticut town took steps to protect herself. She asked the manager to have her telephone fixed so she could receive calls but couldn't make any.

"She explained that she liked to take a drink now and then and on those occasions not only made a lot of calls, but was insulting to her friends. She would order the one-way arrangement for a few days at a time, then would ask regular service restored.

"The manager finally suggested the real solution might be for her to stop drinking, to which she retorted: 'Young man, you tend to the telephone business and I'll tend to my drinking.' "

• • •

GOLD MINE. When the assistant advertising manager of the Chase National Bank, New York City, saw a recent morning newspaper's story and pictures of the rufous-necked hornbill which had landed on the roof of the Chase offices, he immediately telephoned the bank's advertising agency.

By noon copy was complete. It carried a picture of the bird and a headline repeating a Chase slogan—"Somebody told me to talk to the people at Chase."

The ad appeared in the morning newspapers next day. And the bank man remarked: "A bird on the roof is worth two 1,000-line ads."

• • •

ONCE BITTEN, TWICE SHY. A Philadelphia magistrate recently discharged four accused gamblers because he distrusted evidence obtained over the telephone.

Apparently, his generosity was based on personal experience. For the magistrate said: "Why, only two weeks ago, somebody called and told my wife I had been running around. And I was at home all the time."

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★ ★ ★ IN THE ★ ★ ★ NATION'S CAPITAL

by FRANCIS X. WELCH WASHINGTON EDITOR

Representatives of Independent and Bell segments of telephone industry, Western Union, CIO Communications Workers of America and NARUC testify in opposition to federal excise taxes before House committee.

WHEN PRESIDENT EISENHOWER killed the recently approved congressional bill to do away with the 20 per cent tax on moving picture admissions, he gave the other excise tax sufferers a certain amount of negative comfort. Ike did not formally veto the movie tax relief bill. He merely let it die with a pocket veto by failing to sign it within the 10 days allowed, while Congress was still in session. He explained, however, that the government could not afford to lose the taxes now being collected on movie admissions and that it was not fair to select one industry for excise tax relief.

It was the latter comment which is giving fresh hope to telephone industry spokesmen who appeared last week before the House Ways and Means Committee to argue for repealing of the 25 per cent tax on long distance calls and 15 per cent tax on local exchange bills. The House Ways and Means Committee has been holding extraordinary night sessions with a view to developing a strong recommendation for general tax overhauling to the next session of Congress, which begins in January.

Before going into the interesting testimony of the telephone industry and allied witnesses, it might be worthwhile to consider the arguments made for the repeal of all high wartime excise taxes by the well-known Beardsley Ruml. Mr. Ruml will be recalled as the tax wizard who figured out the pay-as-you-go scheme for bringing our income taxes up to date through payroll deductions during the year in which the tax liability accrues. This is doubtless sound practice and there are few, if any, objections to it at this late date. However, the relatively "painless extraction" of income tax installments from each pay check has made it possible for the federal government to collect, without too much delinquency, a much heavier tax bill than was collected in the days before the Ruml plan, when we all had to ante up the whole tax at once on the 15th of March following the tax year.

Ruml's latest plan, however welcome as a means of getting rid of the telephone excise taxes ond other excise taxes, is certainly debatable in some particulars. The main objection seems to be that Ruml would like to put the government in the black by the simple process of changing labels on the bookkeeping entries. He says we have been charging off capital assets as debt liabilities and otherwise mishandling cash funds to the point where the books call for $12,000,000,000 more than Uncle Sam's debt liability actually incurs.

This is interesting, if true, and would certainly be a cheap way of writing off our excise taxes—which Ruml thinks should be done. The trouble is that we couldn't fool the bond buyers and other people who depend on Uncle Sam's credit, in a direct financial way, into thinking that he had $12,000,000,000 more in the treasury by simply writing up the books. Admittedly, government bookkeeping has left a lot to be desired in the past, but it could scarcely be that bad.

For what it may be worth, however, here is a brief description of the general classification of reforms Ruml would like to make in the federal fiscal procedures—totaling $12,000,000,000 in "overstated revenue needs":

Two billions of this he accounts for by saying it could be saved through efficiency and sensible economy — and that's certainly an understatement. The other $10,000,000,000, he says, is a matter of improper federal bookkeeping.

Two billions for "capital items" (such as REA loans for telephone and electric service) improperly charged as spending. He gave as examples of this: Housing mortgages, rural electrification and small business loans and commodity loans and purchases.

Four billions for investments, such as hydroelectric and atomic energy plants and irrigation developments, which should be book-kept as self-liquidating authorities and not as spending.

Four billions, by treating intake and outgo on a cash basis and ignoring all accruals, such as the so-called social security reserves.

Whatever loans and purchases are eventually realized on, need not be treated as out-of-pocket spending.

Whatever power and irrigation developments can be amortized through proper charges to the beneficiaries could be regarded as good investment, although it has yet to be demonstrated that atomic energy can be used to create new wealth, and the government has not yet learned how to charge for power or water on a business-like basis.

As for the cash-basis budget, the government has already spent what it has collected for old-age insurance, and will have to lay new taxes when the annuities are due. Maybe the government should reduce those taxes to meet the yearly output rather than abolish the four-billions-plus on telephone service, jewelry, furs, movies, appliances, etc., which Mr. Ruml would wipe off the books.

But it is easy to see that, however welcome the repeal of telephone excise taxes might be, Mr. Ruml's balancing the budget by strictly bookkeeping methods would not produce lasting economy. Politicians have too many ideas on how to spend money to overlook what would be virtually an invitation to spend more. Take, for example, Ruml's idea of calling an REA loan a "capital item" (meaning an asset) instead of an "expenditure" (meaning a debt obligation). If we think that the sky is the limit *now*, on congressional appropriation for REA loans, think what a merry time the politicians would have borrowing on more and more REA loan authority, if they were carried as "capital items." They could say they were creating more assets. Yet, we all know that when REA makes a loan, it does so with our

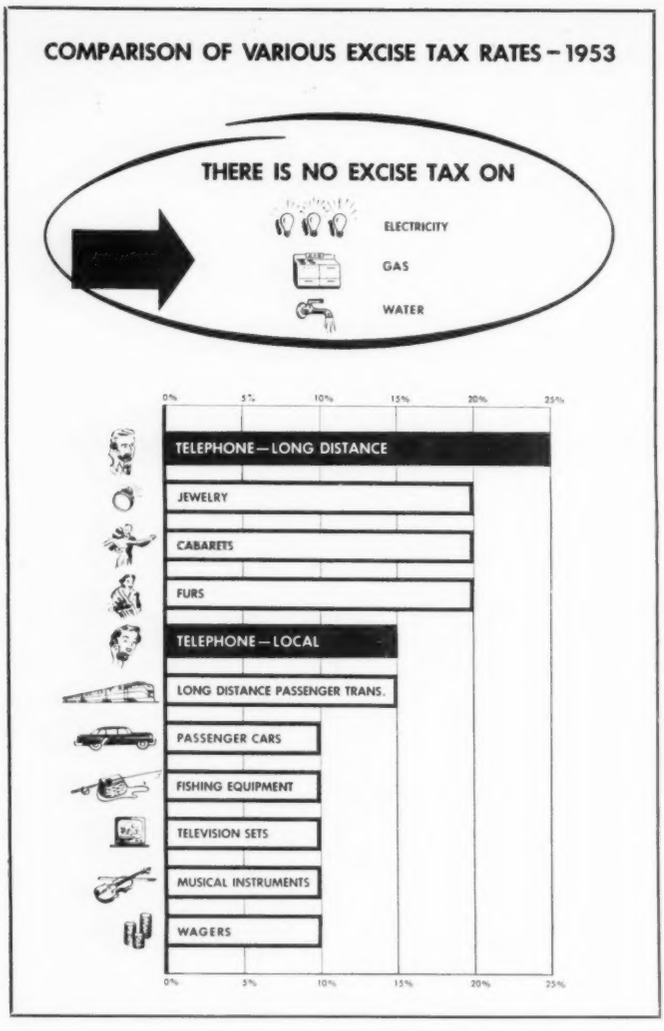


Fig. 1

COMPARISON OF VARIOUS EXCISE TAX RATES – 1953

	Rate
Liquor	*
Tobacco	*
TELEPHONE TOLL MESSAGES (over 24¢)	25%
LEASED WIRES	25
Jewelry	20
Cabaret admissions	20
Furs and fur articles	20
Cosmetics and toilet preparations	20
Luggage	20
Safe deposit boxes	20
LOCAL TELEPHONE SERVICE AND TELEPHONE MESSAGES UNDER 25¢	15
Domestic telegraph, cable or radio messages	15
Transportation tickets over 35¢	15
Television receiving sets	10
Musical instruments	10
Passenger automobiles	10
Radio receiving sets	10
Phonographs and records	10
Refrigerating equipment (household)	10
Electric, gas and oil appliances	10
Wagers	10
Trucks and buses	8
Commutation or season tickets	No tax
Electrical energy	No tax
Water service	No tax
Gas service	No tax
Taxicab fares	No tax

*Cannot be stated as a flat percentage. However, the liquor and tobacco taxes collected in the fiscal year 1952 were greater than the miscellaneous internal revenue taxes collected from any other industry. In 1950, the percentage of taxes (including excises) to sales was 67.4% for distilling and 52.4% for tobacco as opposed to 26.6% for the Bell System, which was the next highest industry group. The latter was 7.7 percentage points higher than the next highest group.

Fig. 2

tax money, even though the amount of the loan may be repaid, plus sub-normal interest, in 35 years. Calling such loans assets is something like playing poker with your own IOU's—it's a fine thing as long as the other players in the game will stand for it.

Witnesses Against the Telephone Tax

Both Independent and Bell telephone branches of the industry were well represented at the House Ways and Means Committee hearings on excise taxes. Also appearing against these taxes were representatives of the CIO Communications Workers of America (CWA), the National Association of Railroad & Utilities Commissioners and Western Union Telegraph Co.

All of them had to cover pretty much the same ground for obvious reasons. But each managed to convey special emphasis on certain points which may have some effect on the committee's forthcoming recommendations to the Congress.

Samual F. Nixon of Westfield, N. Y., president of the Chautauqua & Erie Telephone Corp., was the witness for the United States Independent Telephone Association. He had the advantage of coming from the home district of Rep. Daniel Reed, who also happens to be chairman of the House Ways and Means Committee. Nixon made two special points: (1) That the telephone excise tax is unfairly "hidden" in the telephone bill, taking advantage of the subscriber's misunderstanding, to the disadvantage of the telephone company; (2) that its very high level is hurting the nation's economy by shrinking the consumer dollars available for capital goods.

On the first of these points, Nixon stated:

"The excise tax on telephone service is paid for by the telephone subscribers and that tax is collected, cost free to the government, by the telephone companies as part of the telephone bill. Subscribers do not, generally speaking, differentiate between the charge for telephone service and the charge for excise taxes but merely look upon the bill for both the telephone service charge and the excise tax thereon as 'the telephone bill.'

"Not long ago a prominent rate case attorney told me that many times he had asked witnesses to state the nature and extent of their telephone bill and what portion represented excise taxes and what portion the charge for telephone service. Many witnesses did not know the composition of the bill but knew only the amount of the total monthly charge for both telephone service and excise taxes. Those witnesses were objecting to rate increases. In their opinion the telephone bill was already high enough. They apparently did not realize that all of the money called for by the telephone bill did not belong to the telephone company."

On the second point, Nixon found it hard to believe that local telephone service should be taxed at the same high rate as cigars, cigarettes and pipe lighters, or that long distance calls should be taxed higher than cosmetics, toilet articles, furs and jewelry, and other luxuries. He commented on this point:

". . . we have now come to the point where the pent-up demand is lessening and the full impact of the excise tax will manifest itself. As this begins to take place the gross severity of the inequity of taxing telephone service at higher rates than non-essentials will progressively depress the normal expansion of our business and hamper us in obtaining capital for construction and continued improvement of telephone service.

"You see, a utility like a telephone company has to compete in the money market with oil, manufacturing and other utilities companies, and all others requiring capital. The excise tax tends to dry up the capital market by subtracting from the customer's spendable dollar, amounts which might otherwise be saved and invested in new capital, and also raises doubts in the minds of some investors as to whether an industry so very heavily taxed is truly a good investment.

"It should be quite apparent that if the excise tax were removed the consumer would have an increase in spendable and savable income by that amount. It has been pointed out to

FROM A POLL TAKEN BY THE AMERICAN INSTITUTE OF PUBLIC OPINION PUBLISHED MARCH 1, 1950

During the war the Government put a special tax ranging from 15% to 25% on such things as jewelry, furs, movie tickets, railroad tickets, etc. Which one of the following excise taxes do you personally dislike the most?

	National Total	Men	Women
Baby oil and baby powder	24%	26%	23%
TELEGRAMS AND TELEPHONE CALLS	22	26	19
Cosmetics and toilet preparations	13	6	21
Railroad tickets	10	12	7
Movie tickets	9	10	8
Women's purses and handbags	6	2	9
Jewelry	3	3	3
Furs	1	1	2
None	12	15	9
All	4	4	3
Don't know	2	1	3
	106%*	106%*	107%*

*Percentages add to more than 100 because some respondents gave more than one answer.

Fig. 3

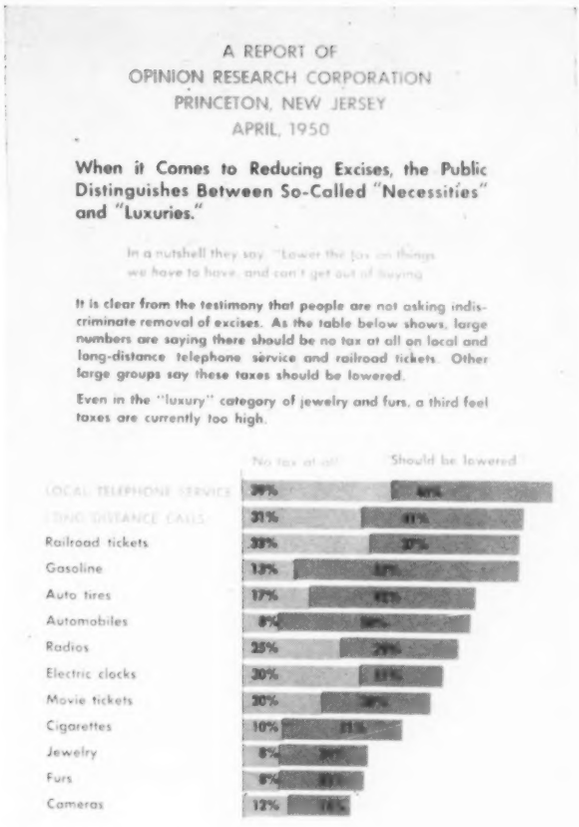

A REPORT OF
OPINION RESEARCH CORPORATION
PRINCETON, NEW JERSEY
APRIL, 1950
When it Comes to Reducing Excises, the Public Distinguishes Between So-Called "Necessities" and "Luxuries."
In a nutshell they say, "Lower the tax on things we have to have, and can't get out of buying.
It is clear from the testimony that people are not asking indiscriminate removal of excises. As the table below shows, large numbers are saying there should be no tax at all on local and long-distance telephone service and railroad tickets. Other large groups say these taxes should be lowered.
Even in the "luxury" category of jewelry and furs, a third feel taxes are currently too high.
No tax at all
Should be lowered
LOCAL TELEPHONE SERVICE
LONG DISTANCE CALLS
Railroad tickets
Gasoline
Auto tires
Automobiles
Radios
Electric clocks
Movie tickets
Cigarettes
Jewelry
Furs
Cameras
39%
31%
33%
13%
17%
8%
25%
30%
20%
10%
6%
9%
12%

Fig. 4 ⟶

this committee in previous hearings that the government recoups a great portion of this tax in other forms and would probably suffer no great loss of revenue from their repeal."

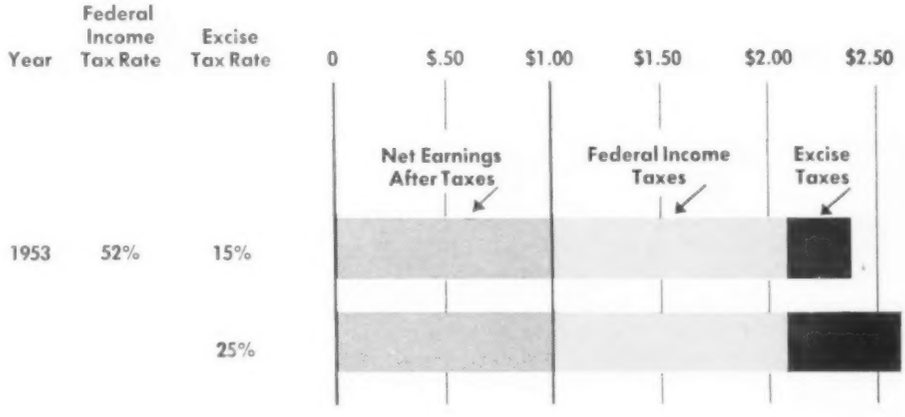
It was Mark R. Sullivan, president of Pacific Telephone & Telegraph Co., who appeared for the Bell System. Sullivan stressed the necessity of telephone service as compared to non-essential products and services. He went on to emphasize the discriminatory nature of the telephone tax in view of the fact that none of the other necessary residential utility services are taxed at all, in the form of excise levies on their customers—water, gas and electricity *(See Figs. 1, 2, 3, 4 and 5)*.

He came up with something new (to this observer, at least) when he covered the *unpopularity* of the telephone excise tax—a point that is sure to strike the average congressman most forcefully. We all know, of course, that the public does not like this tax and never did. But Sullivan demonstrated by the results of an independent opinion survey *just how much more unpopular the telephone tax is than other excise taxes.* He said on this point:

"A public poll taken in 1950 by the American Institute of Public Opinion placed the telephone tax second only to the tax on baby oil and baby powder in a list of the taxes most disliked by the public, and these were followed by cosmetics, railroad tickets, movie tickets, women's purses, jewelry and furs, in that order. This was illustrated with a graphic colored exhibit. The tax on baby oil and powder has been removed, so now telephone service is at the top.

(Please turn to page 53)

UNDER PRESENT FEDERAL TAX RATES, THE CUSTOMER MUST PAY UP TO $2.60 TO PROVIDE THE COMPANY WITH $1.00 OF ADDITIONAL NET EARNINGS



Telephone rates must be increased a minimum of $2.08 in order for the company to retain $1.00 after Federal income taxes. This increment is inescapable because 52% (or $1.08) of the $2.08 goes to the Federal Government as income taxes. Then the customer must be charged excise taxes on the entire $2.08. Thus, where the 15% excise tax rate applies to the $2.08, the additional excise tax is 31¢; and where the 25% rate applies, it is 52¢. The end result is that the customer must pay from $2.39 to $2.60 in order for the company to retain $1.00 as additional earnings.

Fig. 5

The Complete Engineer

By W. V. KAHLER, President, Illinois Bell Telephone Co.

In this address to the graduating class of Rose Polytechnic Institute Mr. Kahler makes some points of interest to prospective telephone engineers

AS I THOUGHT about what I might say to this graduating class today, I tried to put myself in your place. When you are aware that my graduation from "engine school" occurred some 30 years ago, you'll quickly see the difficulty of "putting myself in your place." My best guess is that, just as *I* felt 30 years

ago, *you* feel tired. Graduation celebrations, yes! But more, the fatigue that's bound to set in after four years of intensive study.

At this point *your* graduation experiences and *mine* lose their similarity. When I left the University of Missouri, engineers were not much in demand. At least, *I* wasn't. My best offer was $25 a week—and since it was my only offer, I took it.

It has been estimated that the United States today needs 40,000 more engineers. Rose Poly and all other engineering schools are graduating about 23,000 this year. Consequently, each of you has probably had his choice of *several* good positions. Just this week a Chicago *Daily News* reporter began an article on the job opportunities for June graduates with this sentence: "If the situation gets much worse, a graduate engineer won't have to get out of bed in the morning to find a job."

Don't let this plush job market go to your head. You don't have to go back 30 years to find times in which engineers were not in demand. Some of you may remember the employment difficulties encountered by the engineering graduates of 1949 and 1950—and that day may return sometime. You have no guarantee of a permanent eager market for your services.

I am not a prophet of gloom. As a matter of fact, I feel wholeheartedly that the long-range outlook for the engineer is good. Our society is growing more and more complex each day. Great recent technological advances suggest that the engineer is destined to become an increasingly important member of our society.

However, I did read recently that Henry L. Ellsworth said on his retirement as commissioner of the Patent Office, that his resignation was really of no great concern because mankind had achieved all of which it was capable—at least in the direction of material perfection. I was disturbed by this until I noticed that Mr. Ellsworth had retired in 1844—109 years ago! A few things of consequence have been developed since that time—such as the airplane, radio and TV, the atom bomb, and, if you'll forgive me, the telephone.

It's axiomatic that with each new development there remains one less thing to be developed. But each new development makes possible many more that were hitherto unthought of. The Centennial of Engineering as a profession, was observed last year in Chicago with a convocation of over 50 professional engineering societies. You will usher in the second 100 years. It may well be the golden age of your profession.

Five years ago the Bell Telephone Laboratories announced the invention of a scientific curiosity which they named the transistor. *Fortune* magazine recently characterized it in these words: "The transistor and its minute relatives will almost certainly stimulate greater changes in commerce and industry than reaction motors, synthetic fibers, or even, perhaps atomic energy. In the transistor and the new solid-

state electronics, man may hope to find a brain to match atomic energy's muscle."

In the telephone business, the transistor is already a vital part of an electrical brain which will ultimately enable any customer to dial his calls

across the continent as easily as he now dials his neighbor across the street.

Transistors are in various products now on the market, in secret war devices, and Dick Tracy's wristwatch radio is closer to a commercial reality because of it.

Here's a spectacular example of the effect of just one invention upon our technology. When the transistor moved from the category of things to be developed into the category of things developed, it made possible countless other technological advances.

Dr. John Rettaliata, president of Illinois Institute of Technology a few weeks ago in talking to a youth group said:

"The next half century is going to be your particular half century. You are going to grow up in it, go to school and college in it, marry in it, raise a family, and have your success in it . . . and I think you are going to enjoy it more and have more satisfaction out of it than we of this generation have had out of ours."

It's clear that you graduating engineers have every reason to look upon the world as your apple. Your opportunities for achievement and recognition are almost boundless. It is truly a thrilling view ahead in three dimensions—and full color.

But—and I suspect you knew I would finally come to that word.

No, I'm not going to talk about a world political and military struggle which can—at any time—blot out my rosy picture of your opportunities. Rather, I am simply going to develop for a few minutes three themes about how you, as individuals, can best fit into this new world of opportunity of yours.

If you want to attain material success in business—and I do not confuse happiness and success because they may or may not go together—if you wish to progress to fullest recognition of your abilities, this is my suggestion:

Be a *Complete Engineer* (Maybe it's because I like to cast a trout fly that I think of "complete"—it's an Izaak Walton word. He wrote a long book on "The Complete Angler.")

To be a "Complete Engineer" you must:

(1) Continue your engineering education—to which your fine courses here have been but the prologue;

(2) Learn the most difficut of all the arts and sciences—human behavior, getting along with people; and

(3) Recognize the impact of your work on society as a whole. And more than that, actively participate in your community's social and economic progress.

W. V. KAHLER

First, just a few thoughts on continuing your professional training. I imagine your instructors have told you many times that your formal education in engineering *alone* will not make you a *good* engineer. I would, however, add that you are well on your way to becoming one. But with the complexities of your profession—with all of the basic knowledge that you've had to absorb in your four years here—I'd guess that you are at best only an unseasoned professional today. If your experience at all parallels mine, I'm sure that, up to now, you've had all you could do to master the tools of your trade. In reality you now begin your post-graduate course in engineering, in business, and in life.

Your *basic attitude* in the important months which follow today's activities will have a profound effect on your success as an engineer, and on the pleasures you will get out of life. Every year a number of new engineering graduates come to work for us at Illinois Bell. I don't have the same opportunity to meet with all of them that I did when I was chief engineer—but I still manage to keep in touch with their progress. I guess I could say that these graduates fall into three categories. Every once in a while we get one who is the cartoon prototype of the college graduate. He knows all, sees little, and apparently hears nothing. Fortunately, we get very few of these and even those few soon realize that their learning process has not yet ended.

Then every once in a while we get a Casper Milquetoast type of engineer who has become convinced, somehow, that he really doesn't know anything at all and must learn everything all over again. Neither of these types is what we look for in business. We don't expect you to be a professional engineer when you come to us fresh from the campus, but we do expect you to do two things, which, of course, puts you in a third category—the type we really look for. One, recognize your shortcomings and set about learning what you must do to correct them. Secondly, we expect you to recognize your strong points and to use them to the best of your ability. And, I might add, it would be wise on your part to do both things in consideration of the other fellow.

Regardless of your degree of technical perfection, each of you brings to your job a free mind which is the most valuable asset of all. Use of that mind, and the fresh approach to problems that it gives you, can be your most significant contribution in the early months of your career.

You will recognize more fully, too, the vast range and interplay of engineering skills. Many a mechanical engineer finds himself learning and doing electrical engineering, as I did. Many, too, find themselves doing no engineering at all, as I now do.

Permit me to draw on my own experience for an example or two. We have all types of engineers at work in the telephone company. In the hands of these engineers rests, to a great extent, the success of our business. It all starts with the estimates of the *Commercial Engineer*. He is a man who must predict not only how much the demand for telephone service will be, but geographically where this demand will come. Upon the accuracy of his work depends the success of the work of the *Traffic Engineer* who must predict what volume of telephone calls will be made by the people the Commercial Engineer estimates will want telephone service. This in turn affects the work of the *Plant Extension Engineer* who must decide whether and where we will build new exchange buildings or enlarge those already in existence. The work of all these engineers affects that of the *Equipment Engineer* who must decide what telephone equipment is needed to provide service for the new customers. The potential work of the *Building Engineer* is in turn dependent on the conclusions of all four. He must design and build an economical building capable of housing the people and equipment needed to provide the telephone service we expect the public will want.

I could consider with you the many ramifications of the engineering decisions that go into the work of a myriad of other engineers before service becomes an economic reality. But I think I have said enough to make clear a very important point: Bad engineering on the part of any one of these engineers in any of these particular spots makes impossible the effective work of all the other engineers, and affects the ulti-

mate success of the company of which they are all a part. You can see how the learning process is endless, as your own chosen field impinges on that of others, and theirs on yours.

Point Two: The Human Element; and there are two aspects of this. The human element in your engineering work and the human element in getting along with your associates—the other members of your team.

First, your work. Too often even the experienced engineer does not look beyond the purely technical aspects of his job. It is perfectly possible to engineer a device, a plant, or a machine, which is technically perfect in the eyes of the engineer but becomes impractical when combined with the all-important human element involved in its use.

For example, when the newest model of the telephone was designed, with the numbers and letters on the outside of the dial instead of the inside, it was found very soon from experimental trials that fast accurate customer dialing to the degree required was not possible until a tiny white target dot had been placed in the blank spaces inside the dial holes.

The job of the engineer does not stop with equations, slide rule and blueprints. A bridge that is safe, but does not look safe, can be an unsuccessful bridge. A product or service is not skillfully engineered unless it meets the test of public usage and acceptance. You have heard that the public is king in any type of business, and this is especially true of the business I happen to be a part of. No engineering problem can be solved without considering the public relations consequences of its solution.

Public relations is a much used and little understood term. Quite often I find people who seem to be trying to make up their minds whether they will have public relations or not. In business you can't escape having public relations—and every member of the team must play his part to make them *good* public relations. Public relations is basically *performance*—and the engineer affects greatly the ability of his company to perform. Thus he cannot escape his public relations responsibilities, if he wants his company to prosper and be respected.

By now many of you are asking yourselves—"What does all this mean to me *now*? I'm not the engineer who is going to make *final* decisions for quite a while." You're right. This is in many ways the era of the specialist and you must, as you gain stature in your job, become as good a specialist as you can. Because many of you will, five, 10 or 20 years from now, be in administrative work rather than in the technical type of engineering work you are going to do when you settle down on your first job.

About one-third of all engineering graduates eventually become administrators and that fact, of course, should be encouraging to you because it shows the wide area of opportunity that is open to you. And it shows that business has a place in its top echelons for the engineer who can become a leader, and develop into a business administrator. There is no simple, pat formula that I can give you which, if followed, will guarantee your success as an administrator. There are a few things I've observed, however, which might prove helpful to you as the years tick off.

As an engineer you have learned that $2+2=4$, and that a straight line is the shortest distance between two points. I've found that in the business world very few things are all black or all white. Most things—and most situations—are some shade of gray. And it is not unlikely that you will find in business, quite often, that a straight line isn't the shortest distance between points—that sometimes the long way around is the quickest way to your goal. I guess you already know something about that twist of the old adage. I know I recall from my courting days that the long way home was often the most pleasant, and I expect you'll agree. That hasn't changed any in 30 years.

As an engineer you'll have to make your decisions and your plans effective through other people. You cannot do everything yourself. This doesn't mean that your life will be one continual compromise of your principles and ideals. It means, rather, that you will have to concentrate your efforts, not only toward finding a solution, but also in finding a way to put your solution into effect.

Perhaps the best example of the effect of human relations in industry is the *now* famous experiments conducted at the Hawthorne plant of the Western Electric Co. They started with the theory that improved working conditions would increase employe productivity. Without going into details of the experiment, they found that the mere fact that someone was interested in the employes' jobs—*and in them* — caused increased productivity in groups where working conditions had *not* been improved, and even in groups where working conditions were deliberately degraded as part of the experiment. In other words good *human* relations alone, caused production to be stimulated.

It is in this field of human relations you will find one of your first opportunities to broaden your scope—to expand your personality and effectiveness. John D. Rockefeller once said: "I will pay more for the ability to handle people than for any other ability under the sun."

The folks in sales, advertising, politics, and many kindred fields know this. They practice it quite effectively every day. You must cultivate it. Don't look down your nose at the salesman—learn to be one. When you add to your powers of analysis the abilities you must have in the human relations field, you will have that rare combination of talents which will bring you great rewards and the recognitions you undoubtedly want. Some men look good when you look down upon them. Others look good when you look up at them. These make good bosses. But the men who look best of all are the men who look good no matter how you look at them.

Now far be it from me to dispute the merits of marrying the boss' daughter, *but* only a few can achieve success via that route. The most lasting and satisfying progress is made by those propelled up from the group in general recognition of their outstanding ability. Some are temporarily successful by being yanked up from above, but that success is usually temporary. The greatest achievement and the greatest recognition comes from having *the group* recognize that you are the best among them. This feeling can only be achieved if you have demonstrated your broad outlook and your ability to work with others.

A German military writer once said that all officers could be divided into four groups: The brilliant, the industrious, the stupid, and the lazy. He went on to say most officers possess a combination of these traits. Brilliant, industrious men make very fine staff officers. They have the intelligence to conceive a plan and the energy to see it through.

The brilliant and lazy make fine line officers. They're smart enough to execute their plans well and their laziness keeps them from getting bogged down in the details of a field command.

Then there are the stupid and lazy. They don't add much to military luster, but they can be used for certain small tasks. Their laziness keeps them from getting into too much trouble.

Above all, this military writer said, the ones to really look out for are the industrious and stupid. These are the bulls in the china shop—always rush-

(Please turn to page 48)

TROUBLE CLEARING

Anticipating and Preventing Cable Trouble

By L. N. MARTIN

IN OUR article which appeared in the July 11 issue of TELEPHONY we began a discussion of ways and means of preventing cable trouble. In that article we listed and discussed four steps that a telephone company may take to reduce its cable trouble, viz:

(1) *Clear Cable Trouble Promptly.* This often makes the difference between a few reports and a complete cable failure.

(2) *Make Dry Weather Tests.* If sheath breaks which occur in dry weather are located and cleared before it rains, many trouble reports will be prevented.

(3) *Prevent Ring Cuts and Sheath Fatigue.* These cases are caused by movement of the cable.

(4) *Care for Vacant Pairs.* Trouble often originates in unused pairs. These cases do not cause trouble reports and are not caught on routine tests made from the switchboard. Therefore special treatment of vacant pairs is recommended.

Our fifth item is:

(5) *Get That Chronic Case.* When a case of wet trouble dries out before it can be located (or shall we say, dries out because the company is slow in locating it) it will appear again during the next heavy rain. If it again dries out before it is located, a chronic case of trouble is established.

Between rains the cable is not entirely dry (a sensitive voltmeter or ohmeter will show this) and there is noise and cross-talk. In a common battery plant, corrosion caused by electrolysis often occurs, causing increased cross-talk and sometimes flashing trouble. The company is lucky if this corrosion causes a case of solid trouble which may be quickly located. In a magneto plant, electrolysis rarely occurs but may sometimes be purposely induced by placing a dry battery on one or more vacant pairs.

A chronic case of cable trouble is exasperating to the company and a great injustice to the subscribers. Even though the company's trouble record as a whole may be satisfactory, there is a block of subscribers served by the cable in trouble who are receiving *very poor service.* In some small exchanges we have seen this condition exist for a year or more.

What can be done about it? The company should first realize that it *must* get this chronic case regardless of expense. The time is past when subscribers may be asked to put up with a case of chronic trouble indefinitely. However, in the long run the cost of doing whatever is necessary to clear this case *now* may be less than the cost of half-hearted measures every few weeks. A subscriber may say: "If you can't fix that cable put up a new one." And he is quite right. Fortunately this extreme measure is not often necessary. A cable may seem to be rotten from end to end but when the trouble is found it will all be in one spot or, at most, in not more than two or three locations.

PART 31. The preceding article on cable trouble appeared in the July 11 issue, page 27.

Sometimes, however, when a cable is so badly cut up that there is more "wrap up" than sheath and the trouble is proved to be in numerous locations, installing a new section of cable may be the best solution.

Methods of locating cable trouble are beyond the scope of this article, but this subject has been covered many times in TELEPHONY by able writers. We will mention one "sure fire" method which is justified when a case of chronic trouble has resisted all the usual methods. The trouble can be detected, even between "flare ups" if a sufficiently sensitive meter is used. Having located the trouble in a certain section by checking the count that is in trouble, make an opening in the center of this section, pick up a pair that is in trouble and test both ways with the sensitive meter. This reduces by half the length of the section that is in trouble. (If the trouble tests both ways there are two or more cases of trouble and each must be treated separately.)

Not so many openings will be required as one might at first think. For example: If the section known to be in trouble is 1,000 feet long, the first opening locates the trouble within 500 feet; the second, within 250 feet; the third, within 125 feet; and the fourth, within 62.5 feet. Having narrowed the field to 62.5 feet, the trouble can surely be located by other methods, and four openings is a small price to pay to clear a "chronic."

Among the methods that may be used for the final location is for one man to listen on a pair with a receiver in series with a few dry cells, while another man (keeping within sight) prods the cable at about six-inch intervals with a pole. The telephone receiver is a very sensitive instrument and many times we have successfully used this method to determine the exact location of the trouble.

Our advice is: *"Get that chronic case regardless of whatever you have to do to accomplish your purpose.*

(6) *Install and Maintain Correct Protection.* By protection we mean not only the types of protectors to use and where to locate them but also correct bonding, grounding, insulation, and (very important) clearance from foreign wires.

We wrote a preliminary article on protection which appeared in the July 4 issue of TELEPHONY. We stated in that article that small companies should not attempt to do their own protection engineering but should follow the specifications of some large companies, and, of course, they should consult with the manufacturers of protection equipment.

(7) *Protect the Cable Against Damage by "Foreign" Workmen.* By "foreign" workmen we mean any workman who is not an employe of the telephone company. Recently, we visited an exchange that had 100 per cent buried cable. We asked the plant man: "How do you locate trouble in your buried cable?" His reply was: "We walk over the route of the cable until we see a man digging or see signs of recent digging and there is our trouble." He went on to say that the only trouble they had ever had was caused by "foreign" workmen and they had experi-

enced plenty of that. Incidentally, this man was lucky in knowing the route of his buried cable. Many companies do not have records of the exact route.

There are two sides to this question. It is, of course, a criminal offense to purposely damage a telephone cable, and to do so through gross carelessness should subject the perpetrator to damages. However, the telephone company is more interested in preventing the interference in the first place than in prosecuting the offender after damage has taken place. No amount of damages can compensate for a service interruption. On the other hand, the telephone company should locate its cable where it will be the least subject to damage. Buried cable should be deep enough to avoid any ordinary digging operation. Thirty to 36 inches is recommended. Above all, the company should know exactly where its buried cable is located and it should prepare maps showing this location in reference to some permanent landmarks.

None of the other utilities (electric-gas-water) will damage the property of the telephone company if they can possibly avoid it. All the utilities in a community, including the telephone company, should get together and exchange maps of their underground plants. Each company, when planning underground work, should consult the maps of all other utilities as well as its own. A composite map showing the underground facilities of all utilities on one sheet would also be a good idea.

Building contractors may not fully realize the possibility of damaging the underground or aerial plant of a utility, or the consequences to the community. However, in most cities a building permit must be obtained before starting any excavating or construction work. Anyone may see the record of these permits. In fact they are usually listed in the daily papers. In a small town any building project is usually common knowledge. The telephone company, therefore, has plenty of opportunity to inform itself of what is going on in the building field and has ample time to interview the contractor or owner involved.

State and county highway authorities are usually very cooperative if the telephone company will take the first step and discuss with them the serious consequences to the telephone service of the community if telephone plant is accidentally damaged.

In some locations, damage by firearms causes frequent trouble. Who is responsible? If adult hoodlums—they should be prosecuted without mercy; if children of school age—an indirect approach is best.

In one case, we arranged to make a talk on the telephone business at the school near a location where repeated damage had occurred to cable. The children were much interested in what we told them about the details of a telephone exchange. All children want to know "what makes the wheels go round." They were also impressed with the importance of uninterrupted telephone service to the community, to their own families, and to themselves. The consequences of even a small leak in a lead cable was explained to them, but *we did not say a word about the damage being caused by bullet holes.* We had no more trouble of that type in that neighborhood.

Damage by "foreign" workmen and others can be greatly reduced by alertness on the part of the telephone company and by cooperation with all other users of the highways, streets, and alleys.

(8) *Keep the Cables Clear of Trees and Foreign Objects and See That Clearances from Foreign Wires Meet the Specifications.* This may be accomplished by regularly scheduled inspections. Once or twice per year is suggested. These inspections should also result in the detection of such items as slack, bowing, missing rings, incorrect bonding and grounding, etc.

(9) *Inspect the Terminals.* This inspection should be made once or possibly twice per year. Why not do this when a workman visits a terminal for other purposes? Surely each terminal is visited at least twice a year in the course of regular work. This is satisfactory if a little bookkeeping is used. One plan is to keep a card record with a card for each terminal. (An ordinary line card may be used for this purpose.) Each inspection is entered on the card for that terminal.

When a workman visits a terminal for any purpose the card for that terminal is consulted and if it has not been inspected for six months or more and the workman can spare the time, he is told to make a complete inspection and report what he finds. It is well to use a check list of the items to be included in the inspection so that none will be overlooked.

After an inspection, the terminal and its surroundings should be in perfect condition unless the terminal is to be replaced or some items are to be completed by other forces, such as a construction crew or a cable splicer. In

(Please turn to page 50)

States REA Electric Co-ops Should Be Honest with Customers on Rates

Members of the North Dakota Association of Rural Electrical Cooperatives meeting at Bismarck recently were probably somewhat taken aback when one of their speakers declared co-ops are selling electricity too cheaply, the Fargo *Forum* stated in its July 26 issue. "Cheap power" has long been the guiding light of REA co-ops, the paper said.

E. H. Brant, member of the North Dakota Public Service Commission, pointed out at the co-op meeting that REA electric co-ops in North Dakota went in the hole by $561,000 in 1951 and $651,000 in 1952. The co-ops operated in the red despite the fact that under the favorable state tax laws they paid only $145,000 in property taxes, according to the *Forum* report.

If they had been assessed and taxed at the same rate as privately-owned utilities their tax would have been $1,400,000 and they would have been about $2,000,000 in the hole each year, it was said.

The *Forum* stated that Mr. Brant did not suggest that this tax subsidy be eliminated, but he did propose that the co-ops be honest with the customers and charge them enough money to pay their present operating costs. He pointed out that the customers of private utilities must pay a rate sufficient to keep the private utility in the black and to pay the taxes which the REA co-ops escape.

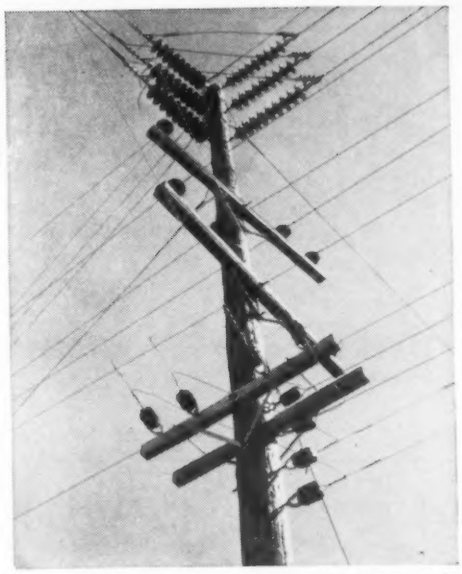
The increase in rates would not be great—only one-half to one cent per KW hour, the *Forum* reported, but such an increase would eliminate the possibility that the REA co-ops would come around seeking government handouts at some future date.

The co-ops could well follow the advice of Mr. Brant instead of sticking willy-nilly to the phony goal of cheap electricity; as in everything else, the ultimate consumer must pay for what he gets, the *Forum* concluded.

Here's Proof of Performance...

304 pressure-creosoted poles installed in 1915

—more than 90% are still in service after 38 years



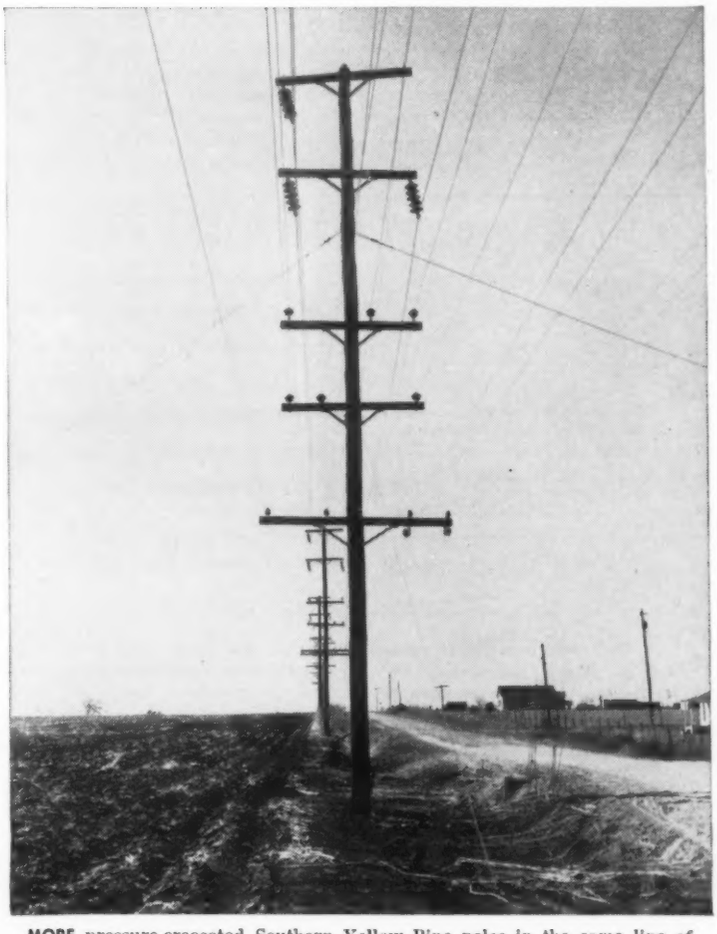
IN SERVICE since 1915, this pressure-creosoted pole supporting 66 and 22 kv lines, as well as Company telephone lines, is located in the Eddy-Temple Line of the Texas Power and Light Company.

● Texas Power and Light Company—a long-time user of Creosote Oil as a wood preservative—has in its files many outstanding service records of pressure-creosoted poles. One of the most interesting concerns 304 poles on the Eddy-Temple Line of the Company.

More than 90% of these Southern Yellow Pine poles—originally installed in 1915—are still giving excellent service. This excellent record has been established in spite of an annual average rainfall in the area of 46 inches and hot, dry winds of summer that sweep across the prairie. And in the next five years, only about 10% of the poles are scheduled for replacement.

Such service records are typical of poles treated with Creosote Oil. And they are the principal reason why Creosote Oil is, and has been for many years, first choice as a pole and crossarm preservative.

When U·S·S Creosote Oil is used, you can count on top performance from pressure-creosoted wood. U·S·S Creosote Oil is a uniform product, made by continuous processing in the world's largest tar distillation plant. For complete information, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.



MORE pressure-creosoted Southern Yellow Pine poles in the same line of Texas Power and Light Company. Additional years of service are anticipated from most of the remaining poles.

U·S·S CREOSOTE OIL

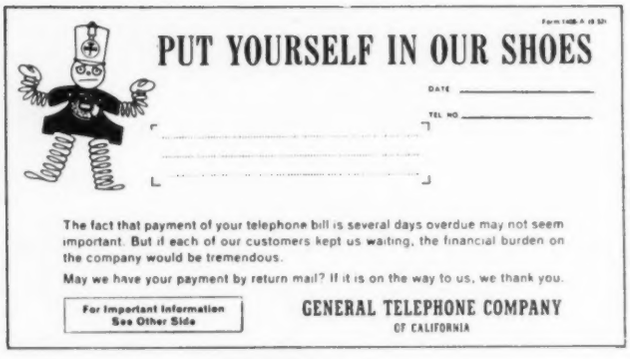
-1619

UNITED STATES STEEL

Friendly Reminders Jog Memory of Forgetful Subscribers

IT'S LATER THAN YOU THINK—
DATE
TEL NO
It is more than fifteen days since we mailed you your bill for telephone service. Not having received payment within this period, your account is delinquent.
Apparently this bill has been overlooked. May we have your payment by return mail?
If payment is now on the way to us, we thank you.
For Important Information See Other Side
GENERAL TELEPHONE COMPANY
OF CALIFORNIA

REMINDER NO. 3


PUT YOURSELF IN OUR SHOES
DATE
TEL NO
The fact that payment of your telephone bill is several days overdue may not seem important. But if each of our customers kept us waiting, the financial burden on the company would be tremendous.
May we have your payment by return mail? If it is on the way to us, we thank you.
For Important Information See Other Side
GENERAL TELEPHONE COMPANY
OF CALIFORNIA

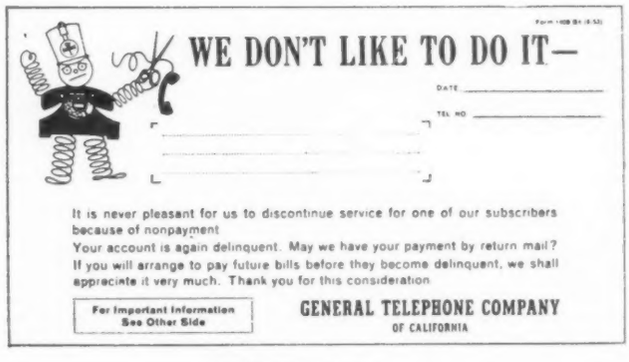
REMINDER NO. 1

PAST DUE
YOU CAN STILL MAKE IT!
DATE
TEL NO
Not having received payment as of the above date, your account with us is now delinquent. You can still avoid possible disconnection of service, however, if we receive your payment by return mail.
If payment is already on the way to us, we thank you.
Paying future bills before they become delinquent will be appreciated.
For Important Information See Other Side
GENERAL TELEPHONE COMPANY
OF CALIFORNIA

REMINDER NO. 4

BILL
FORGET SOMETHING?
DATE
TEL NO
Our records indicate that apparently you have overlooked paying your telephone bill which is now overdue.
Perhaps your payment already is on the way to us. If so, we thank you.
For Important Information See Other Side
GENERAL TELEPHONE COMPANY
OF CALIFORNIA

REMINDER NO. 2


WE DON'T LIKE TO DO IT—
DATE
TEL NO
It is never pleasant for us to discontinue service for one of our subscribers because of nonpayment
Your account is again delinquent. May we have your payment by return mail?
If you will arrange to pay future bills before they become delinquent, we shall appreciate it very much. Thank you for this consideration
For Important Information See Other Side
GENERAL TELEPHONE COMPANY
OF CALIFORNIA

REMINDER NO. 5

Collecting a bill that someone owes you and about which there is no question is one of the hardest jobs in the world. The job is still harder when you feel reasonably certain that the person who owes the bill has just forgotten it momentarily. The job is at its most difficult when you sincerely want to retain the friendship of the person from whom you must collect.

To help in solving the knotty problem of bill collecting, the commercial department of the General Telephone Co. of California, Santa Monica, Cal., has designed a series of bill reminders for delinquent accounts. The Little General cartoons are humorous without being "cute," and the messages are definite without being abrupt. The different headings and the different poses of the Little General convey subtle shades of meaning and indicate to the subscriber the feeling the company has about the overdue bill. A bill just a little overdue from an ordinarily good subscriber would obviously warrant a much gentler treatment than would a second warning to an habitual late-pay customer.

"It is possible that in time the Little General may become as much a symbol of our business as Reddy Kilowatt has of the electric utilities which use that figure. In the meantime, he will be doing a good job of collecting our bills for us at the same time that he keeps our customers our friends," the company states. Company personnel contributed roughs as suggestions for the Little General series. Reprinted from *The Circle*, employe magazine of General Telephone Co. of California.

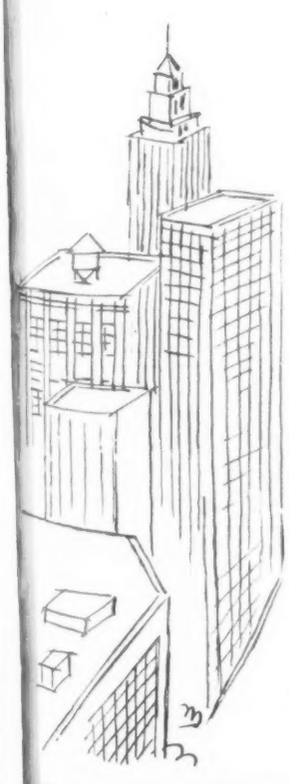
WTVI, Belleville, Ill., Linked to Nationwide TV Facilities

Station WTVI, Belleville, Ill., was connected to the Bell Telephone System's television network facilities on Aug. 11, according to an announcement by the Long Lines Department of the American Telephone & Telegraph Co.

Network programs are fed to WTVI (the second station in the St. Louis area) from the transcontinental radio-relay route at Chicago via Terre Haute, Ind. TV signals are received at the Bell company's building in St. Louis and then beamed to the studio's transmitter over an 11-mile microwave link provided by Southwestern Bell Telephone Co. The addition of station WTVI to Bell's nationwide network facilities now makes it possible for 147 TV stations in 98 cities to receive network programs.

Protect Community Progress, Subscriber Satisfaction, Profits, with

PLANNING . . .



Independent Telephone Companies provide the vital nerve system of communities which make up the backbone of our nation. It is, then, a matter beyond selfish interest for each company to pace its community's growth with adequate expansion of communications.

There should be no obstacle to this, restrictions and allocations notwithstanding, IF there is co-ordinated planning. As we have said before, if every Independent Company would take a tip from the "Big System" and sit down with its equipment supplier, far in advance of pressing need, to discuss plans for progress, future expansions would profit greatly. Companies which follow this policy with North take advantage of a vast store of experience in the logistics of plant-to-population programming. They profit by a superior brand of telephone engineering. They secure sound guidance in planning for their own communities' needs.

At the same time, production plans, on a long range, can be scheduled to the needs of the industry, as prudent travelers might synchronize their watches.

Speaking for steady progress, we would say — Set your planning sights years ahead, — count the steps you must take to achieve the ultimate, then, before your estimates become "immediates"

NORTH *for "Expansion Insurance"*

THE NORTH ELECTRIC MANUFACTURING COMPANY

Originators of **ALL RELAY** *Systems of Automatic Switching*

610 South Market Street, Galion, Ohio, U. S. A.

The OPERATOR'S CORNER

by MAYME WORKMAN, Traffic Editor

AN AUTOMATIC Answering Device answers the telephone when a ring is received and then makes a recorded announcement, the wording of which is at the discretion of the called customer. For a period which may be specified in the announcement, the apparatus at the called telephone is then ready to automatically record a message. Normally this period is about 30 seconds. The beginning and the end of the recording interval is indicated by a tone signal.

Automatic answering devices are usually in operation at a called telephone during periods when the premises are unoccupied or, in any case, when no person is available to answer.

Operators should be instructed in the handling of automatic answering device connections in order that they may be handled properly.

A mechanically answered connection may be identified by:

(1) The wording of the mechanical answer if you supervise a connection.

(2) Comments by the calling party that a mechanical answer was received or questions as to the meaning of such announcements.

(3) A request to re-establish the connection because of inability to complete leaving a message on the first call.

(4) A claim that no satisfaction was received because of the mechanical answer.

A connection to an automatic answering device is established in the regular way since it is necessary for the calling party to hear the recorded announcement.

In making subsequent attempts whenever a mechanical answer is received, verification of the called number is omitted, and as soon as the recording interval has ended, the operator will disconnect. The operator will reach the calling party and establish connection as on a new call. If the called line is released before the recording interval is ended, a line signal may result.

If the calling party indicates he wishes to talk to the called telephone when you can reach a person, the operator will explain that there will be a charge for the original call if the connection was completed. The operator will prepare a regular delayed call ticket, entering "aa" in the attempts space and the subsequent attempt time requested by the customer. If the customer does not indicate a time when he wishes attempts made, the operator will add one hour to the time at which she received the report.

In any case the regular charge applies if the calling party is holding the line and a connection is completed to a telephone which is equipped with an automatic answering device. A mechanical answer is considered the equivalent of an answer by a person qualified to take a message.

If an operator encounters any of the following conditions, she will connect the customer with the supervisor:

(1) Customer asks for an explanation.

(2) Calling party indicates uncertainty.

(3) Calling party indicates that he did not understand that he could have left a message.

(4) Calling party claims no satisfaction was obtained.

(5) Calling party requests to reestablish contact or have the called telephone rerung in order to finish leaving a message.

(6) Customer claims a cut-off and wishes to be reconnected in order to finish leaving a message.

The supervisor will handle the foregoing cases in the following manner:

If a customer indicates that he received a mechanical answer and asks for an explanation, explain the case to the best of your ability, being guided by the description of the equipment in the first paragraph of this article.

If the calling party indicates uncertainty which appears to be the result of having reached a telephone with automatic answering and recording service, or indicates that he did not know that he could have left a message, explain if necessary, that the called telephone may be equipped with a mechanical answering and recording device and ask the calling party if he wishes to be connected. If he does, establish connection as on a new call and make no charge for the original call.

If the calling party claims no satisfaction was obtained and it develops that the claim is a result of receiving a mechanical answer, explain that a mechanical answer is the equivalent of an answer by a person qualified to take a message, and therefore the regular charge is made.

If the calling party requests to be reconnected, or requests to have the called station rerung, stating that a mechanical answer was received, and the request is in order to finish leaving a message, inform the customer that another connection will be considered as a new call. If he agrees, have the operator proceed as on a new call charging for the call in the regular way. If more than one successive request is received to restore the same connection, charge for each connection completed.

If the calling party claims a cut-off on a call which is identified as being to a telephone with an automatic answering device, handle as a regular report of cut-off.

Traffic Questions

(1) On a local call from a postpayment coin line requiring a deposit, should the connection be split in reaching the called station?

(2) How should the operator proceed when the called station answers on a call from a postpayment coin line?

(3) Please describe an Automatic Answering Device.

(4) If NC is encountered over tan-

(Please turn to page 52)

sion

Rigid Tests Guard Monophone's High Performance Standards

"Why, it sounds so real you can almost feel the breath of the person speaking to you!" Heart-warming remarks like this are to be expected when you start using Type 40 Monophones. Type 40's deserve such praise because their superior standards are maintained by constant tests.

In the picture above, for example, a technician is testing Monophone receiver capsules for fidelity of response. He impresses a standard fluctuating sound on the receiver, then makes sure that its response produces a designated wave pattern on an oscilloscope. This particular pattern indicates that the receiver will reproduce speech with the high fidelity that is required of a Monophone. It's the pattern for *perfection in transmission!*

Many other tests are also made on Type 40 Monophones, from raw materials to finished product. And Type 40's *design* enters the picture, too—for here is an instrument designed with fine transmission foremost in mind. That's why so many telephone men like it.

Order a supply of Type 40's today. You'll like them—and so will your subscribers!

REA Approves Six Telephone Loans Totaling $2,198,000

The Rural Electrification Administration approved six telephone loans during the week of Aug. 3 to 7. Details of the loans follow:

Mon-Cre Telephone Cooperative, Ramer, Ala., $130,000, second loan to this borrower. Approved on Aug. 3.

The funds from this loan will be used to cover increased costs resulting from a larger operating area and facilities to serve 121 subscribers not included in the first loan. The original loan approved in March, 1952, was for $125,000.

With the two REA loans, the borrower plans to construct a system of 162 miles of line which will bring modern telephone service to 430 rural subscribers in Montgomery, Crenshaw, Pike and Bullock counties. New buildings to house dial central office equipment will be constructed at Ramer, Lapine and Pine Level. The Ramer building will also house commercial office facilities. Present plans include service without toll charge among all three exchange areas.

* * *

Mebane (N. C.) Home Telephone Co., $605,000, to improve and expand rural telephone service in Alamance and Orange counties. Approved on Aug. 3.

The applicant now furnishes dial service to 930 subscribers through a central office at Mebane.

With the loan funds the borrower plans to construct 236 miles of new line, and new dial central office buildings at Mebane and Prospect Hill. These facilities will enable the company to furnish improved service to the existing subscribers and modern service to 749 families now without telephones. There will be service without toll charge between the Mebane and Prospect Hill exchange areas; also between these areas and Burlington.

The completed system will consist of 273 miles of line.

* * *

Powells Telephone Co., Powell Station, Tenn., $210,000, third loan to this borrower. Approved on Aug. 4.

These loan funds will be used to construct 21 miles of additional line and other facilities to serve 794 rural subscribers not included in the first two loans. With the three REA loans the borrower will be able to furnish modern telephone service to 1,537 subscribers in Anderson and Knox counties. Service without toll charge will be available between the borrower's exchange area and Knoxville.

The system was cut over to dial operation during October, 1952. Over 800 subscribers are now receiving dial service, of which 313 were connected since approval of the first two loans. Since the cutover date, there has been an extraordinarily heavy demand for service due in part to the residential and business needs of employes at the atomic energy center near the operating area of the borrower, and also in part to the fact that a system capable of furnishing adequate service is now available.

The completed system will consist of 106 miles of line.

* * *

Chequamegon Telephone Cooperative, Cable, Wis., $285,000, second loan to this borrower. Approved on Aug. 4.

These loan funds will be used for the construction of 72 miles of additional line, and other facilities, to furnish modern telephone service to 74 subscribers not provided for in the first loan. They will also cover increased construction costs involved since the original loan of $425,000 was approved in December, 1951.

The two REA loans will enable the borrower to construct a telephone system consisting of 10 dial central offices which is four more than originally planned. Since the first loan was approved, the new cooperative has purchased, as a nucleus, telephone properties consisting of 228 miles of line serving 590 subscribers. The borrower plans to build 273 miles of new and rebuild 50 miles of the acquired.

The added facilities and improvements possible under both REA loans will bring improved service to the existing subscribers and modern service to 659 subscribers now without telephones. Thirty-seven of the subscribers will be switched through a nearby magneto exchange.

Dial central offices will be located at Cable, Mason, Brule, Waino, Oulu, Herbster, Port Wing, Barnes, Lake Namekagon, Marengo and Grandview. Present plans include service without toll charge between some of the borrower's exchange areas.

The completed telephone system will operate over 474 miles of line in Bayfield, Douglas and Ashland counties.

* * *

Colfax (Cal.) Telephone Exchange, $66,000, second loan to this borrower. Approved on Aug. 7.

These loan funds, together with the first loan of $120,000 approved in October, 1952, will be used by the borrower to modernize and expand the present system serving 464 rural subscribers in Placer and Nevada counties.

The borrower proposes to rebuild the greater part of the existing line and add 3½ miles of new line. A new combination dial central office-commercial office building will be constructed at Colfax. With these new and improved facilities, the borrower will be able to bring modern telephone service to 589 subscribers.

The completed system will consist of 36 miles of line.

* * *

Hill Country Telephone Cooperative, Fredericksburg, Tex., $902,000, to finance the improvement and expansion of rural telephone service in Mason, Gillespie and Kerr counties.

As a nucleus, the new co-op proposes to acquire the following telephone properties: Ingram Telephone Exchange; Lange-Mills Telephone Co., Doss; and the Fredonia Telephone Co. These groups are presently serving 673 subscribers over 383 miles of line through magneto central offices at Ingram, Hunt, Doss and Fredonia.

The loan funds will be used to construct 254 miles of new line and rebuild 337 miles of the acquired line. The four magneto offices will be converted to dial operation and new dial offices installed at Katemcy, Streater, Snehling and Mountain Home. The REA loan will thus enable the cooperative to bring modern telephone service to 975 subscribers including 302 now without telephones.

The completed system will consist of 673 miles of line.

A Selected List of Telephone Books

• ***Electronics for Communication Engineers,*** **by John Markus and Vin Zeluff (1952); 610 pages.....$10.00**

This book is composed of 252 outstanding articles which have appeared in *Electronics* magazine. They discuss such subjects as amplifiers, components, filters, oscillators, power supplies and transmission lines, etc. Articles contain many equations, charts, monographs, etc.

• ***National Electrical Code Handbook,*** **by Arthur L. Abbott; 633 pages (seventh edition).....$7.00**

Planned to enable electricians to understand the National Electrical Code and to do work in accordance with it. Gives all Code requirements, restating involved rules in simple language, plus explanations, practical directions and diagrams, showing what the rules mean and how to apply them.

• ***American Electricians Handbook,*** **by Terrell Croft; 1,773 pages (sixth edition).....$10.00**

This book covers everything from fundamentals of electricity to practical suggestions for remedying the troubles of electrical equipment. Discusses electron tubes and circuits, fundamentals of construction, operation, and application of electronic devices in industry, control generators (Amplidyne and Rototrol), electronic control of motors, automatic electric drive control, synchros, dry-type transformers, copper-oxide and selenium rectifiers, Signalite fuses, thermoplastic insulated wire, load-center industrial distribution systems, fluorescent-lamp developments, and farm wiring. All material is in accordance with the National Electrical Code.

• ***Cost Reductions in Communications,*** **by Roy Stone (1953); 342 pages.....$10.00**

This book is written for business concerns and tells them how they can get the most in telephone service for their money, and how the most efficient service can be had from the large selection of apparatus and services which telephone companies can supply. It should be in all telephone company libraries and in the hands of large business users of telephone service.

• ***Essentials of Microwave,*** **by Robert B. Muchmore: 236 pages.....$4.50**

Provides a broad understanding of the subject and stresses physical principles that underlie operation of microwave devices. Covers electromagnetic laws of Maxwell, characteristic waves, wave guides and antennas, cavity resonators and filters, typical microwave antennas, waves and electron streams, and grid-control tubes. Basic concepts and applications of klystrons, traveling-wave and multiple-stream tubes, magnetrons, and radar are also included. Electrical noise, microwave radio systems and measurements, relays, and applications of microwaves in physical research are among other subjects treated.

• ***How to Pass Radio License Examinations,*** **by Charles E. Drew; 464 pages (third edition).....$5.75**

Supplying essential material required for Federal Communications Commission examinations, this book now provides sections on Elements 7 and 8, covering information on technical, regulatory, and operational practices in the application of aeronautical communication and navigation as well as the use of radar in the marine service. Question-and-answer arrangement also supplies material required for radio-telephone restricted operator permit, radio-telephone third-class operator permit, and radio-telegraph third-class operator permit in Elements 1, 2 and 5. Further information is given for those preparing for first and second-class radio-telephone and radio-telegraph operator licenses.

• ***Electrical Measuring Instruments—Part I,*** **by Drysdale and Jolley; 598 pages (second edition).....$12.00**

Directed to all people concerned with design, manufacture and use of fundamental electrical instruments. Incorporating information on latest advances in the field, the volume covers mechanical design and construction, conditions of rapid indications, elements of electrical theory and design, and properties of electrical materials. Other discussions include: Permanent magnet moving coil instruments; soft iron, hot wire, and electrostatic instruments; and dynameter ammeters, voltmeters and wattmeters.

• ***Elements of Electricity,*** **by William H. Timbie: 631 pages (fourth edition).....$5.50**

Presents useful electrical engineering material in a clear, physical way, without depending heavily on mathematics. In adding modern material to show present-day applications of the principles, there are revised sections on circuit analysis, direct-current machinery, electrochemical processes, and gaseous conductors. There also are discussions of aluminum wire, ceramic capacitors, transistors, radar, television, dry and gaseous rectifiers, and other points that typify the change and progress since 1937 edition.

• ***Writing the Technical Report,*** **by J. Raleigh Nelson; 356 pages (third edition).....$4.50**

The fundamental principles of order and planning and style presented in this book should help anyone produce technical papers and reports that are models of clarity, coherence, and completeness. It contains five major parts: (1) Design and composition; (2) specific directions for setting up both long and short form reports (illustrated with sample annotated reports); (3) systematic procedures for critically examining and evaluating written reports; (4) summary of report writing principles organized for quick reference, and (5) detailed 16-week course in report writing that supplies self-study guidance and practice.

• ***Your Telephone and How It Works,*** **by Herman and Nina Schneider; illustrated by Jeanne Bendick; 96 pages.....$2.00**

Telephone companies can recommend this book to subscribers and schools for non-technical information on the telephone. Tells simply and with clear detail the complete story of the telephone. Beginning with a simple manual switchboard, it moves step-by-step to a full explanation, with lively illustrations, of the automatic system and highly complex switchboards which serve large cities. Scientific information is accurate and up-to-date and includes facts about paystations; radio-telephone communications; ship-to-shore and train telephones; handy-talkies and walkie-talkies.

• ***Three Books on Employe Training and Supervision,*** **by Harry C. Walker**

(1) Off-Job Training.....$1.75

(2) Foremanship and Supervision
- (a) Oral Expression in Supervision..... 1.00
- (b) Functional Element in Supervision..... 1.00
- (c) Human Element in Supervision..... 1.00

(3) The Analysis and Presentation of Engineering Problems (2 Vol.)..... 2.50

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THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

THE BLAIN FAMILY, dogs included, loaded into the old jalopy early one hot July morning and headed south from Washington, D. C., through the tidewater section of Virginia. This is rich, exceedingly beautiful country. It is served by the Tidewater Telephone Co., Warsaw. This section has a distinguished place in the history of the United States. In it five Presidents of the United States were born — Washington, Madison, Monroe, Harrison and Tyler; and in it dramatic events of our colonial and national development took place.

Our first stop was at Kitty Hawk, N. C., where we visited the Kill Devil Hill National Memorial which commemorates the achievements of Wilbur and Orville Wright, the brothers who on Dec. 17, 1903, from level ground, near the base of Kill Devil Hill, took off for the first flights ever made by man in a powered machine heavier than air.

The first flight was of 3½ seconds duration and covered a distance of 120 feet. Three more flights were made this same morning, each longer than the previous one, and the fourth one was for a distance of 852 feet in 59 seconds (into a 27-mile-an-hour wind).

It was also from the slopes of Kill Devil Hill that the Wright brothers conducted their glider experiments in the years 1900, 1901 and 1902.

The Kill Devil Hill National Memorial contains about 314 acres. Atop the hill is the Wright Memorial Shaft, a triangular pylon of gray granite 60 feet high. Stairs lead to an observation platform at the top of the pylon where a powerful beacon throws a beam of light visible for many miles.

Prior to the erection of the memorial shaft, Kill Devil Hill was a massive dune of shifting sands. The dune was anchored by seeding with special grasses adapted to the sandy soil.

Our next stop was Nags Head, N. C. Here we enjoyed several days of swimming in the Atlantic Ocean, climbing sand dunes and resting.

The dogs enjoyed the beach immensely and chased sand crabs and sea gulls to their hearts' content. They also took a mischievous delight in sniffing at the toes of fair damsels who happened to be sunning themselves in the sand, then scampering off when the ladies' shrieks scared even the placid sea gulls.

The fishing member of the family tried her luck, but the less we say about that the better.

The legend of Nags Head is rather an interesting one. Back in the days of pirates, when tales drifted ashore about the treasures traveling at sea and being plundered by pirates, one of the "Bankers" (native of the sand banks) got the inspiration which brought out the name "Nags Head."

A lantern was tied around the neck of an old and gentle horse; then this old "nag" was led slowly up and down the tallest of the sand dunes so that the light would shine out to sea. As a ship's captain saw this bobbing light, it seemed to him to be from a ship riding at anchor in a harbor. But when he tried to put into this harbor, his ship piled up on treacherous shoals. Then land pirates made the crew walk the plank, and looted and burned the ship.

We next visited the Ft. Raleigh Historic Site, on the north end of Roanoke Island, near Manteo, N. C., the scene of Sir Walter Raleigh's ill-fated attempts to establish an English colony in America.

It was here also on Aug. 18, 1587, that Virginia Dare was born. She was christened Virginia because she was the first English child born in "Virginia" and the new world.

It was here at Ft. Raleigh, too, that we were thrilled by the performance of Paul Green's "The Lost Colony" at the Waterside Theatre. This drama, now in its 13th year, tells in swinging free verse, and with lavish use of music and dance, the story of Sir Walter Raleigh's attempts to plant an English colony in the wilderness of the New World.

It tells of the early hopes and hardships of the little band, of their dreams of a democratic empire, of the birth of Virginia Dare, and of their final disappearance forever into mystery, leaving only the word CROATOAN carved on a tree within the fort.

The cast of 200 performers, including singers from Westminister College choir, presents this moving drama in a magnificent outdoor theatre located on the spot where the first English settlers landed in 1585. The site is now a national shrine.

The large outdoor theatre is in itself most interesting. The acoustics are near-perfect—the performers, the choir and the Hammond electric organ can be heard clearly in every seat. Although amplification of some type is used, neither microphones nor loud speakers are visible to the audience. Lighting effects are cleverly controlled through the use of a great number of spotlights mounted in two towers built to resemble guard towers of an old frontier fort.

On our journey through the Southland we noticed particularly that chemical treatment is being extensively employed to control tree growth under lines of both telephone and power companies. Obviously this treatment is proving most effective and is certainly more economical than the old hand-trimming method.

A power crossing in process of construction over the James River near Norfolk, Va., proved most interesting.

Steel towers supported the conductors for a part of the distance and H-fixtures for the remainder of the crossing. These fixtures are constructed by first driving four pilings in the river bed.

One piling is driven in the center and the other three at an angle in a triangle to form a tripod arrangement. Then a pole 90 feet, or longer, is set directly on top of the center piling and securely bolted to the three

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others of the tripod several feet above the base. Two of these fixtures are then braced together to form the H-fixtures.

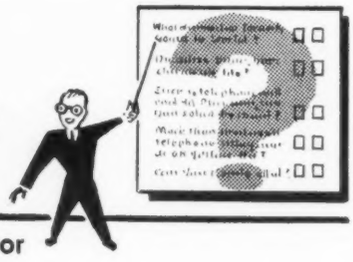
It would no doubt be impossible to construct fixtures of this type without the use of the several large floating cranes available on the job. However, despite this, it is certainly a remarkable pole line construction job.

While on this trip we didn't hear a telephone ring for over a week.

At first this isolation proved to be a relief, but after a period we found ourselves suffering a certain nostalgia for the old familiar sound. Even the dogs gradually tired of the beach and sand dunes, and completely ignored the sand crabs, sea gulls and feminine toes.

It was then that we decided our vacation was over and headed home where we were introduced once more to such mundane activities as cutting the grass.

PLANT MAN'S QUIZ



by RAY BLAIN, Technical Editor

Q. Will the conventional type of headset prove satisfactory for the use of supervisors on a manual switchboard?

A. Ordinarily the transmitter of a supervisor's headset should be equipped with a cut-out button. By the use of this cut-out button, the supervisor may talk to and instruct a student without causing interference to the service.

In addition, the supervisor's headset should be equipped with an extra-long retractable cord that will permit her to move about freely with her set plugged in on the student's position.

• • •

Q. What precautions should be observed in the construction of a concrete pier on a basement floor for the mounting of a motor generator set used for charging storage batteries?

A. It is assumed that the floor is concrete and, if so, we would suggest that it be cut out and the pier for the motor generator set sunk about a foot below the floor level.

It is also a good plan to leave an inch or more of space between the concrete pier and the floor. This space can be filled with a compound to absorb vibrations.

However, it is doubtful if a concrete pier will be necessary.

A much less expensive and, in our opinion, a more satisfactory arrangement is the construction of a metal table on which the motor generator set may be mounted.

Shock mounts are now available which can be placed under the machines to absorb the vibration. These table mounts present a better appearance than concrete piers and are now in general use in the Independent field.

Q. Will it be satisfactory to bury ordinary lead-covered cable if it is well protected by concrete? We are of the opinion that this type of construction will prove more economical than steel, tape-armored cable.

A. Concrete should never be placed in direct contact with the lead cable sheath as the free lime in it may cause serious corrosion.

If you object to the use of tape-armored cable, then we suggest that you encase the lead-covered cable in conduit.

Conduit may be encased in concrete although this extra precaution is not generally considered necessary on the average job.

Unquestionably, conduit proves the best protection for underground cable and it has the added advantage that it can be pulled out and a new section pulled in, in the event of serious trouble.

• • •

Q. We have an open wire line which is used for trunk service between two of our exchanges located about 10 miles apart. This line is presently loaded to capacity and we are in urgent need of additional trunks. In your opinion, can we place carrier equipment in each exchange to provide the additional channels without rebuilding or retransposing the line?

A. This will depend to a great extent upon the present condition of your open wire line. If you now have good transmission without excessive noise or crosstalk, there is every probability that a carrier system will operate satisfactorily without any rebuilding of the line.

Carrier systems are frequently employed to advantage in cases of the type which you cite.

It is suggested that you consult the various manufacturers of carrier equipment to obtain their opinion as to the suitability of their particular equipment to meet your need.

• • •

Q. Will steel, tape-armored cable prove suitable to lay through a shallow lake to provide telephone service over a distance of about 1,500 feet?

A. Steel, tape-armored cable has very little tensile strength; therefore, we would not recommend its use for a location such as you have described unless it can be payed out from a reel set up on a boat and sunk well into the mud at the bottom of the lake.

It might also be possible to lash the tape-armored cable to a messenger strand to provide the required tensile strength before submerging it into the lake. Therefore, it is suggested that you consider the use of single wire armored, submarine cable, and play safe.

• • •

Q. In the design of an underground local cable distribution system, what rules should be considered in the provision of spare ducts? We plan to keep our costs to a minimum, but we also want to make certain that our duct structures are not blocked within the next few years.

A. The generally accepted practice with most operating companies is to provide at least one spare duct for maintenance purposes in all main conduit runs in addition to the ultimate number of ducts that will ever be required to provide the maximum service.

At least two spare ducts should always be provided where the maximum-sized cable is to be installed, so that an increase in cable capacity can be made available without using the one spare duct provided for maintenance purposes.

It is not generally considered necessary to provide spare ducts for lateral cable runs to terminals because these cable failures are usually complete and the spare duct would generally prove to be of no real advantage.

A few extra ducts add very little to the cost of the job at the time a trench is open and their installation may save a much larger amount at a later date.

It is a good plan, too, to provide more than just enough ducts on all main runs in order to play safe.

OFFERING EXTRA VALUE, WHICH YOU CAN ANTICIPATE

DECEMBER 5 . . . *Fall Rural Issue*

• Twice each year TELEPHONY publishes an issue designed editorially to aid small exchange owners. Each of these issues has a circulation of approximately 13,500; additional copies (over and above our regular mailing list of 9900) are sent to non-subscribing telephone companies, rural service lines, pipe lines, Signal Corps personnel and other Government Departments. Obviously, the Fall Rural Issue offers advertisers additional value and also serves to acquaint hundreds of small operators with the latest technique. Most of the reading matter is devoted to the problems of rural telephony.

SUBSCRIBERS and ADVERTISERS alike will benefit from these 3 important issues of TELEPHONY. The only other special issue is in April: TELEPHONY's Spring Construction-Rural Issue. For 1954 this will be dated April 24.

TELEPHONY PUBLISHING CORPORATION

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Also publishers of TELEPHONY's Directory of the Telephone Industry—the reference book consulted all through the year by operating companies and manufacturers.

Courts and Commissions

Commission Denies Nebraska Independent a Rate Raise

The Nebraska Railway Commission on Aug. 4 denied the Jackson Telephone Co. request to increase rates on all classes of service and to eliminate the prompt payment discount plan.

In denying the application the commission stated that the company was not following the prescribed uniform system of accounts and for this reason it was impossible to determine its financial condition.

At the hearing it was also shown that the company was not providing a commercial grade of service and that some persons who requested service were unable to obtain it.

The commission held, therefore, that present rates were commensurate with present service, and that the granting of the application for increased rates would not correct the situation.

The company serves 54 stations, 23 of which are service stations and 31 company-owned. All rural lines are grounded, while some of the urban lines are grounded and some metallic.

V V

Pennsylvania Independent to Issue First Mortgage Bonds

Commonwealth Telephone Co., Dallas, Pa., recently placed privately 1.6 million dollars worth of first mortgage 4 per cent bonds with five insurance companies through Eastman, Dillion & Co.

The Commonwealth company, which operates in the northeastern part of the Keystone state, will use proceeds for expansion and modernization.

V V

Commission Refuses Rehearing of Carolina T&T's Rate Case

The North Carolina Utilities Commission on Aug. 13 rejected petitions for a rehearing of a recent rate case involving the Carolina Telephone & Telegraph Co., Tarboro. The way was thus cleared for an expected appeal to the courts (TELEPHONY, Aug. 8, p. 40).

The rehearing petitions were made both by the company, which contended the increase allowed by the commission was too little, and by the North Carolina attorney general's office, which, as the public's representative, contended the amount was too much.

Carolina Telephone asked the commission for an increase of $2,150,000 a year in the rates charged its subscribers in eastern North Carolina. However, the commission, in a split decision on July 13, only allowed $537,210 in general exchange rates. The commission's majority said this would provide the company a 6 per cent return on its investment when added to a $235,000 increase in toll rates.

The majority opinion was written by Stanley Winborne, commission chairman, but two of the five-member body dissented, claiming the company was getting less than it should. Dissenting commission members were Fred Hunter and Edward McMahan.

On July 28, the attorney general's office, representing protesting subscribers in various communities, filed a petition contending that the company already was earning a fair return, and that it had failed to prove during the hearing that a new increase was needed.

On July 30, the company also petitioned for a new hearing, stating the amount granted was inadequate and asking the commission's reconsideration.

In rejecting both requests for a new hearing the commission stated that it "Has carefully considered the reasons set forth in both petitions and finds no reason has been given in either one which has not been fully considered by the commission."

V V

N. C. Independent Asks Rate Raise of Commission's Naming

The Morris Telephone Co., Roxboro, asked the North Carolina Utilities Commission on Aug. 10 for a general "substantial" increase in rates, declaring that "increased tariffs are mandatory" if subscribers are to receive "the type of service to which they are entitled."

The company stated that its present rates are inadequate and its earnings too low to provide a fair return to its stockholders. It pointed out that during the past fiscal year its net earnings produced a return of "only 2.12 per cent."

The company said further that its rates have not been increased at Roxboro since 1938, and its exchanges at Hillsboro and Yanceyville have won only slight raises since 1947, despite the fact that substantial increases were made in rural service.

The Morris company serves 2,045 subscribers through its Roxboro ex-

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With the Double
and America's
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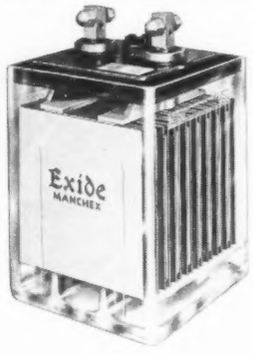
telephone batteries


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type construction provides exceptionally
life . . . latest developments on molded
jars permit compact space saving install
. . . heavy terminal posts with copper
provide extra conductivity for sustained
age at high discharge rates . . . micropo
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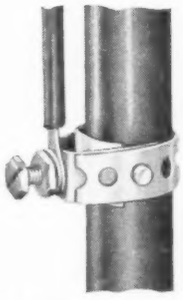
• • • for all telephone, radio and signal circuit station grounds. Design principles of this clamp are field-proved to maintain high pressure contact and maximum conductivity to joint.



Station Ground Clamps are adjustable for grounding to water pipe

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the cook A-9u 7 amp. lavite fuse

For telephone men who prefer the best.

The Cook A-9u Lavite fuse is rated to blow on a 50% overload within 5 minutes.

This is in accordance with Underwriters' specifications and this fuse is listed with the Underwriters' Laboratories.

Cook also manufactures a full line of fuses carrying "Telephone Rating." These fuses blow instantly at their rated capacity.

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. . . are designed to meet the most rigid anchoring and guying specifications.

The patented EVERSTICK Nut Housing locks anchor firmly on rod, making installation simple under all conditions and permitting easy recovery of the rod. Note well-designed, heavily constructed sections of metal in base plate.

EVERSTICK Expanding Plates are *ribbed* to double their original strength; their cutting edge and wedge shape arm socket reduces earth resistance to a minimum and assures easy expansion.

Three-Way EVERSTICK with expanding plates—contacts solid earth at every point around base plate, giving full benefit of earth's holding power.

Spreader Arms extra heavy ribbed with ball and socket joint at top and clinched socket on expanding plates allow heavy bearings to move freely with minimum friction, insuring easy expansion which eliminates buckling or breaking of arms.

EVERSTICK Anchor

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change, 828 through exchanges at Hillsboro and Efland and 241 from Yanceyville.

In asking for a rate increase, the company did not name a figure but left that up to the commission.

V V

Mount Vernon (O.) Company Asks Rate Increases

The Mount Vernon Telephone Co. has filed an application with the Ohio Public Utilities Commission for rate increases which would provide additional revenue of $161,189 a year from the company's Mount Vernon, Fredericktown, Gambier, Centerburg and Danville exchanges.

The request for rate increases is based on the company's 1952 income.

A fire which destroyed equipment and left the city of Mount Vernon without telephone service from May 22 to June 21 had nothing to do with the requested increase, company officials said.

V V

Buys Georgia Independent

Georgia Public Service Commission on July 30 approved the purchase of the Louise Telephone Co., Tournapull, a division of the Tournapull Housing Corp., by the LeTourneau-Westinghouse Co.

V V

Missouri Independent Applies For Rate Increases

Application has been made to the Missouri Public Service Commission for rate increases by the Union Telephone Co., Vandalia.

W. W. Scott, manager, said: "Increased costs of labor and material now required in the maintenance and operation of our plant have greatly increased our cost of operation in the past few years.

"Our present rates do not produce sufficient revenue to carry on the business and provide for taxes and a return."

The new rates sought, to be effective Sept. 1, would increase one-party business rates from $5.00 to $6.00; one-party residence from $2.75 to $3.75.

Two-party rates would be increased from $4.00 to $5.00 for business, and from $2.25 to $3.00 for residence.

V V

General of Ind. Wins 3-Exchange Rate Raise Suspended in 1952

General Telephone Co. of Indiana, Lafayette, was authorized on Aug. 13 by the Indiana Public Service Commission to increase rates at Spiceland and Wanatah.

A raise at Frankton was denied pending installation of dial service.

In January, 1952, the commission approved a $906,519 annual increase covering General's 60 exchanges, but suspended the raise in 31 communities until "adequate" service was provided.

Spiceland, Wanatah and Frankton were among these.

V V

Ask Rate Adjustment in S. C.

A request by the Citizens Telephone Co., Lexington, to adjust its rate schedule, will be considered by the South Carolina Public Service Commission at a hearing on Sept. 17.

V V

Neb. Company's Rate Raise OK'd

Rate increases of 50 cents on all types of service were granted the Ames Creek Telephone Co., Obert, on Aug. 12 by the Nebraska Railway Commission. The increases are effective Sept. 1.

V V

Kansas Company Incorporates

Agenda (Kan.) Telephone Co., Inc., was granted a charter of incorporation on Aug. 7. Wesley Kolman is the resident agent. Capitalization is $9,975.

Rx for Double-Purpose Jobs

Here's the Neale Model K Pull Type Spinner—engineered for versatility. It's doing a great job on electric power lines . . . and telephone lines, too! Model K has a maximum capacity of three 2" O.D. cables, and will spin single cable as small as 5/8" O.D. This spinner may be used with either one or two coils of spinning wire, so you may have either a 13" spiral or wire 6½" apart. Model K is furnished with two LC5 Lashing Wire Clamps, tow rope, cable placing dolly, and chest.

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Use Neale Wire For Best Results

Available in 7 different types. There's just the wire for your particular requirements.

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Commission Suspends New Rates in Arkansas

The Arkansas Public Service Commission on Aug. 4 suspended new rates of the Arkansas Associated Telephone Co., Warrensburg, Mo., for an additional six months pending a final determination of the case (TELEPHONY, May 16, p. 35).

The company, which serves eight northeast Arkansas communities, began collecting higher rates on June 1 under bond. The commission suspended the new rates on June 1.

V V

General of Kentucky Arranges $1,500,000 Loan

It has been reported that General Telephone Co. of Kentucky, Lexington, arranged for a 1.5-million-dollar credit from two banks that is good until June 1, 1954.

The 3½ per cent notes will mature Sept. 30, 1954; there will be a ⅜ per cent commitment fee for unused funds.

The company's initial $400,000 borrowing under the agreement went to pay off temporary bank loans.

V V

Western L&T Wins Merit Award For Safety Performance in '52

Western Light & Telephone Co., Inc., Kansas City, Mo., has received a merit plaque from the National Safety Council in recognition of a noteworthy safety performance in 1952. It was signed by Ned H. Dearborn, president.

It is reported that the Western Light & Telephone company has established disabling injury rates significantly lower than average rates for combination utilities.

For the combined operations of all departments in four states during 1952, the company established a frequency rate that was 58 per cent better than average and a severity rate that was 98 per cent better than average.

It has an active accident prevention program which is participated in by all employes. Interest in the program is kept at a high level through meetings, contests and awards.

V V

To Sell Kansas Mutual

Stockholders have voted to sell assets of the Everest (Kan.) Mutual Telephone Co. and dissolve the organization. The purchaser, Rainbow Telephone Co., proposes to install a new dial system.

in any emergency!

LOWELL WIRES GET THE CALL THROUGH

The technical staff at Lowell Insulated Wire Company uses many physical tests to determine the effect of heat, aging, tensile strength, compression, cold, acids, oils, moisture and abrasion. They also employ extensive electrical tests. To create the maximum performance and dependability which is characteristic of Lowell Insulated Wire, many factors have been combined in a well balanced and efficient manufacturing process. That is why through long years in actual service Lowell Wires maintain a record for reliability and low maintenance or replacement costs. Write today for details.

DROP WIRE — neoprene jacketed, rubber insulated — between buildings and open wire telephone line.
BRIDLE WIRE — neoprene jacketed —link between drop and inside wires.
DUCT WIRE — plastic insulated — used inside buildings for connecting outside circuits to station sets.

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DISTRIBUTED BY: Jack Pruzan Co., 109 Jackson Street, Seattle 4, Washington; **The Telephone Repair & Supply Co.,** 1760 Lunt Avenue, Chicago 26, Illinois; **Hughes Supply, Inc.,** 816 South Main Street, Gainesville, Florida.

The Complete Engineer

(Concluded from page 22)

ing around—getting into trouble themselves and making some for others in the process. *I've* thought that if only we could devise a test that would identify the industrious and stupid for us, it would be a fine thing. Then instead of hiring them ourselves we could send them on to competing recruiters.

The point, of course, is that different jobs require different talents. Not every engineer is a Herbert Hoover, and can be President of the United States. Not everyone wants to be. But the chance for top leadership is yours, if you want it. In the top echelons of American business today, despite the fact that this is the age of specialists, our need is not alone for specialists. Our greatest need is for "generalists." Men usually get to be generalists by first mastering a specialty and being the best at it. Then they pull ahead by adding another specialty and perhaps some knowledge of still others, always with increasing skill in working with people.

I come to my final point, your responsibility to society. I think you'll find, as the months and years pass, you will have increasing responsibilities to your family, to your church, your community, your country, and, yes, even to this college. You've heard some of these things in your "Professional Orientation" course. Important as we engineers like to feel we are, we don't live and work in a vacuum. Not only do others depend on us, but conversely, we must depend on others.

Many of our community problems have their origin in technological progress. It is sheer folly to produce more and better automobiles, for example, without recognizing your responsibilities in the field of good government which must build and maintain the roads we drive on. You cannot expect to continue to work with the freedom and rewards which you will soon enjoy, if you permit the economic system, which makes those things possible, to break down. You cannot expect to have other young well-trained engineering graduates join you in your efforts 10 or 15 years from now if you don't do all you can to make sure that institutions such as Rose Poly continue to thrive.

When you get right down to it the broad aspects of your work don't stop with your job. They go into all parts of the life of your community. Please remember, when you hear someone decry the social problems caused by technological advancement, that you have a responsibility to do what you can to solve those problems because maybe you helped to create them. You'll have the chance to apply the same brilliant engineering mind to the solution of the social problem that you apply in the solution of a technical one. In other words, I urge that you become a "Citizen Engineer" as well as a "professional engineer."

I have tried to sketch a mental picture of the "complete engineer." *He* can be *you* at any stage of your career, beginning with your new job:

He is the man who keeps on perfecting his techniques and acquiring new ones.

He sees beyond his drafting board to perceive the whole problem and the human elements which can upset his precise calculations.

He recognizes that in his day-to-day work he can achieve results only through the help of others and by helping others. He learns that the Golden Rule is as immutable as Newton's law.

He recognizes his responsibilities to society and *does something* about it. He will apply to the solution of social problems the same technical mind which, in part, created them.

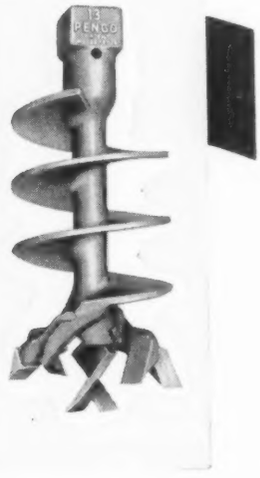
"The Complete Engineer" builds a bridge that is safe—and looks safe; he helps teach people to use it safely; he promotes commerce to flow over it; he helps eliminate the slums that too often cluster around it; he gets a needed bridge built where none exists, and all to the end that the community in which he lives can be improved—all to the end that he can *completely enjoy* the age of which he is such an important and inseparable part.

May you find the years ahead everything that you want them to be.

SAVE HOURS . . . SAVE DOLLARS!

WITH

PENGO *Triple Flight* ANCHOR AUGERS



Especially designed to bore holes for EXPANDING ANCHORS *(good for small poles, too)*

★ Double-helix cutting head eliminates back-thrust, quickly bores true and clean.

★ Triple-flight single helix carries bigger load of dirt from hole . . . you can complete a hole with less than half the trips down and up!

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★ Uses same fast-cutting replaceable PENGO Pilot Bits and PENGO Wisdom Teeth used on all PENGO Earth Augers and PENGO Cutting Heads.

★ Available in 9", 11" and 13" diameters for 8", 10" and 12" expanding anchors, respectively, to fit all popular makes of earth-boring machines.

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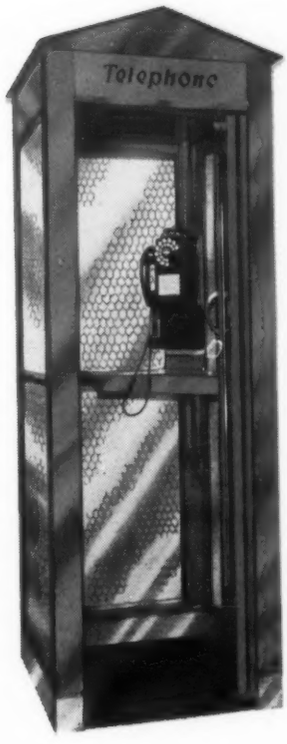
"In modern society there is necessarily a close relationship between education and business. No great nongovernmental university today can survive without business or church support. No great business community today can progress or play a significant part in modern society without the nourishment and support of urban or metropolitan educational institutions. Both are dedicated to the belief that mankind progresses only in a free climate." — FREDERICK E. HASLER, *director, Chemical Bank & Trust Company.*

Dime and dime again

Sherron Outdoor Booths

Invite paystation patronage

The opportunities for paystation yield from Sherron outdoor telephone booths are as big as all outdoors. Highways, motels, roadside eateries, gas stations—all these and many more are likely locations for Sherron booths that will be patronized day in, day out, all day and all year. The clean, attractive steel and wireglass construction of Sherron booths invites use without abuse. Sherron booths won't rot or decay. They are fireproof and termite-proof. Maintenance is at a minimum.



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Five-Day Safety Exposition To Take Place in Chicago

A panel discussion and demonstration on how to cut down fleet accidents will highlight the public utilities sessions of the 41st National Safety Congress and Exposition to be held in Chicago on Oct. 19-23.

M. McComas, assistant secretary of the Cincinnati & Suburban Bell Telephone Co., will be chairman for the panel which will show how the company's motor vehicle accident reduction program works. Participants will be W. D. Knox, commercial training supervisor; C. E. Hosea, staff assistant, personnel and public relations department, and R. M. Sovereign, vehicle maintenance foreman.

Other speakers at the opening meeting on Oct. 20 will be A. S. Bennion, vice president, Utah Power & Light Co., Salt Lake City, Utah, and E. E. Wyland, vice president, Mountain States Telephone & Telegraph Co., Denver, Colo.

Public utility safety men attending the Oct. 22 afternoon session will see a demonstration-discussion on how to conduct a safety meeting. This program will be under the direction of John Talman and Sam Gardner, training supervisors, E. I. du Pont de Nemours & Co., Inc., Belle, W. Va. Following the demonstration the members will split-up into four groups to consider the specific problem, of electricity, gas, water and communications.

As in previous years the American Society of Safety Engineers will present morning sessions on topics of general interest. Subjects will include nuclear energy, industrial lighting, electronic testing, safety training and research, human factors in safety and others.

The 1953 exposition will feature the largest and most comprehensive display of accident prevention equipment to be seen anywhere. All exhibit space in the Conrad Hilton Hotel will be filled with products, equipment and services relating to the promotion of safety, health, first aid, sanitation and general welfare.

V V

"Ownership of industry has become increasingly institutionalized—that is, the stock is held in portfolios of insurance companies, banks, endowment funds, investment trusts, etc. Every American who has life insurance or a savings account has a share in this nation's business."—HENRY E. FORD, *director, development department, E. I. du Pont de Nemours & Co.*

Trouble Clearing

(Concluded from page 24)

that case a written order should be prepared covering the work yet to be done.

At six-month intervals someone should "run" the cards to see that no terminal has been missed.

There are, of course, many other things that can be done to reduce cable trouble. Some of them, such as electrolysis testing, will apply at certain exchanges only. We have named the nine steps that we believe to be most important and which are applicable at all exchanges.

We believe that if any small company experiencing excessive cable trouble will carry out these nine routines (or even five of them) for a year, then compare its cable trouble record "before and after," it will find that it is making progress towards eliminating trouble, clearing trouble more promptly, and rendering better service.

(To Be Continued)

V V

SW Bell Combination-Man Named for Vail Award

Joe M. Woods, a combination-man for the Southwestern Bell Telephone Co. at Montgomery City, Mo., was to have received a Vail medal and a $100 cash award on Aug. 14.

The Vail awards were established in 1920 as a memorial to Theodore M. Vail, former president of the American Telephone & Telegraph Co., to perpetuate his ideas of community service.

Mr. Woods saved the lives of two women on Nov. 6 when their home caught fire.

Hurrying to the house, he found Miss Mackey See, who is blind, and led her to safety from the front porch. Hearing the cries of another woman, he ran to the rear of the house and found Mrs. Laura Sparks with her clothing and hair afire.

He smothered the flames, then climbed a nearby telephone pole to call a physician and an ambulance.

V V

South Dakota Convention

The South Dakota Telephone Association recently announced it will hold its annual convention on Nov. 12 and 13 in the Cataract Hotel, Sioux Falls, S. D.

"TELE-CHARGERS"
For Long Battery Life...
Preventive Maintenance
Permanent Magnet Reference and Magnetic Amplifier Controls
Regulated Selenium Rectifier Battery Chargers with extremely close voltage and drift-free regulation, precise automatic current limiting, fast response and low ripple. Output ratings 49 to 65 VDC, 0 to 1600 Amps, 23 to 27 cells. Regulation ±0.2% from no load to full load with ±10% AC line variation. Ripple voltage filtered to less than 0.5% RMS. Response better than 0.1 second. Low installation cost . . . compact for minimum space requirement.
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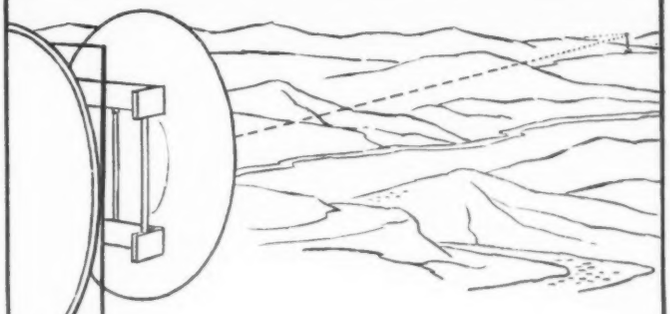
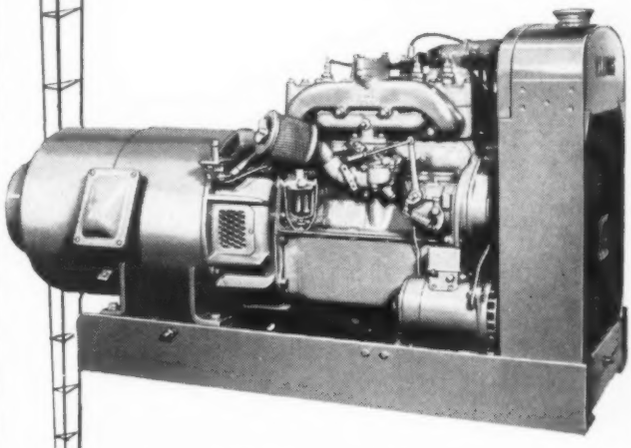
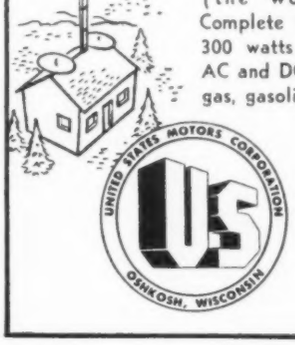


Insure continuous Microwave operation with "US" Electric Plants



Dependability in "U.S." Electric Plants is the result of good design, rugged construction, and freedom from "gadgets." The unit shown is 12.5 KVA, 120/240-Volt Alternating Current. Write for information on the many "U.S." units built for Microwave service. "U.S." personnel is active in the design and development of microwave engine-generator sets in conjunction with R.T.M.A.

"U.S." builds hundreds of Electric Plant models (the World's Most Complete Line) — from 300 watts to 200 KW, AC and DC. Powered by gas, gasoline and diesel.



UNITED STATES MOTORS CORP.

420 Nebraska St.
Oshkosh, Wisconsin

Microwave Channels, Toll Dial Center Added by Long Lines

The Long Lines Department of the American Telephone & Telegraph Co. announced on Aug. 12 that it has completed installation of additional microwave channels on the New York-Boston radio-relay system for use in toll message service.

The system now provides a total of eight microwave channels. Four channels, two in each direction, carry telephone message service, while two northbound channels are used for network television transmission. The two remaining channels will be used for maintenance and protection purposes, Long Lines explained.

The Long Lines Department also announced that on Aug. 17 new automatic switching equipment was placed in service in Newark, N. J. Long distance operators in that city are thus enabled to dial direct to more than 2,000 communities.

The new installation is part of the plan to provide such facilities in major cities throughout the nation for handling toll calls. Facilities were provided jointly by New Jersey Bell Telephone Co. and Long Lines.

Black Beauty Poles lick 'em all!

Whether your BIG pole problem is sleet strain, dry splitting, or damp rot, you'll solve it with Black Beauties! The Texas Creosoting Company's careful pressure-treating process drives creosote into the wood so it *stays* there—gives you a pole that keeps its strength, resists splitting, and defies rot. Cut your maintenance costs as many companies have done—order Black Beauty Poles today!

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Distributors in U. S. and Possessions: Automatic Electric Sales Corporation
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Buy Automatic's APPROVED Supplies

Highest Quality
Biggest Line
Fastest Service

The Operator's Corner

(Concluded from page 30)

dem trunks or over circuits to an intermediate office (dial or ringdown), how many additional attempts should be made before giving the NC report and releasing the customer?

(5) On calls with wrong number, cut-off and better connection precedence, if the TX encounters NC on the first attempt to reach the TTC and, after holding, the circuit is ordered cleared, what action should be taken by the TX?

Answers are presented on page 57.

V V

BOOK REVIEW

"CIRCUIT THEORY OF ELECTRON DEVICES," by E. Milton Moone. 483 pages. Price $8.50.

In the belief that a new device is better understood by a study of its over-all circuit behavior, E. Milton Boone has written "Circuit Theory of Electron Devices." The new text was published in June.

Treating first things first, Professor Boone emphasizes circuit theory rather than the physics of electron devices which he feels is best left to more advanced phases of study. Among the features that combine to achieve Boone's aims are an integration of tube and transistor circuit theory, and a generalization of the four-terminal network theory and its applications to all electron devices operating in their linear characteristics.

The book provides a complete chapter on the linear circuit theory of transistors in addition to the following: diodes, triodes, and equivalent circuits; tetrodes, pentodes, and equivalent circuits; audi-frequency voltage amplifiers; the audio-amplifier power stage; gas-filled tubes as circuit elements; single-phase rectifiers and power supplies; polyphase rectifiers; tuned radio-frequency and band-pass amplifiers; radio-frequency power amplifiers; vacuum-tube oscillators; and modulation and demodulation.

Professor of electrical engineering at the Ohio State University, the author has a wide background of practical research as well. He has worked in the field of microwave tubes at the Bell Telephone Laboratories and, under an Air Forces contract, has been in charge of research activity with microwave wide band tunable oscillators since 1946.

The book may be purchased from TELEPHONY.

In the Nation's Capital

(Continued from page 19)

"Still another poll (also shown by exhibit), made by the Opinion Research Corp., placed local telephone service first and long distance calls second in a list of services and commodities which the public thought should not be taxed at all or on which the tax should be lowered. This list included railroad tickets, gasoline, automobiles and radios, all of which are taxed at a lower rate than telephone service.

"While polls may or may not be accepted as wholly conclusive, we do know from frequent discussions between telephone employes and telephone users that, as the public becomes increasingly aware of this telephone tax, a strong feeling of dislike for its discriminatory features, and disapproval of them, is expressed."

T. F. McMains, vice president of Western Union, made a nice point for the repeal of the tax on telegrams when he told the committee that the excise tax on telegrams had drained off millions of dollars needed to support the nationwide telegraph system and had placed Western Union "at a serious competitive disadvantage with the tax-free and government-subsidized air mail service."

"It is an ironical fact," said Mr. McMains, "that the telegraph company is compelled to aid in the destruction of its own volume by exacting from telegraph users, through the medium of an excise tax on telegrams, an amount equivalent to a substantial part of the air mail subsidy."

Mr. McMains said the telegraph tax discourages the use of telegrams by increasing their cost to the public. He added that it was also a major factor "in destroying the jobs of more than 23,000 telegraph workers."

The telegraph excise tax of about 22 million dollars in 1952 represented less than one-quarter of 1 per cent of all federal excise taxes, said Mr. McMains, and its elimination could have "no substantial bearing on government budget problems."

"But, elimination of this volume-destroying tax," he said, "would be a factor of major significance to the nation's telegraph system, stimulating greatly volume which the company urgently needs and is prepared to handle."

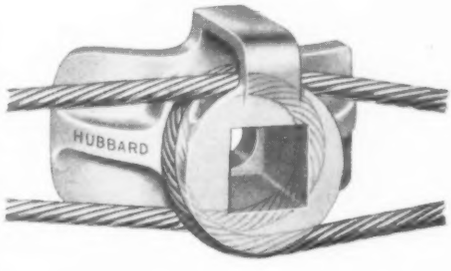
Mrs. Sylvia B. Gottlieb, research director of CWA, appeared for that CIO union to testify against the telephone

HUBBARD
STRAND CONNECTOR

The Hubbard No. 8900 Strand Connector was developed to provide a means for connecting the ends of telephone cable messengers at the pole, and is universally used by the largest telephone companies. It is used especially in connection with the installation of cable rings. It eliminates connecting messengers in the middle of the span and provides an efficient and safer means of support. Cable spinning equipment will not pass over the mid-span connections, therefore the No. 8900 is essential for all cable spinning installations.

Hubbard No. 8900 Strand Connector

Hot Galvanized



Phantom view showing how Messengers are installed on the Hubbard No. 8900 Strand Connector

"Hang the load on Hubbard Hardware!"

OVERHEAD

Cable Suspension Material—Wireholders Pole Seats and Balconies—Clevises Braces—Drive Hooks—Messenger Dead Ends—Extension Arms—Long Span Material—Pins—Clamps—Guards—Stubbing Bands—Guy Protectors—Guy Clamps Pole Struts—Clips—Straps—Hangers Carriage Bolts—Rings—Transposition Brackets—Eye Bolts—Pole, Corner and House Brackets—Guy Hooks—Strain Plates—Storm Guy Straps—Lags—Machine and Hubeye Bolts—Sidewalk Guys REA Telephone Hardware

UNDERGROUND

Cable Racks—Manhole Ladders and Steps Pulling-in Irons—Expanding Anchors Cable Shields—Screw Steelwing Anchors Anchor Rods—Ground Rods and Clamps

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ESTABLISHED 1843
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excise tax. She explained the organized union employe's interest in this matter as follows:

". . . we ask the committee to take into consideration that between 1948 and 1949 there was a substantial decrease in telephone industry employment. In Bell System telephone operating company subsidiaries alone there was a decrease of over 30,000 and in its Western Electric subsidiary there was a similar decrease. *This over-all 60,000 decrease in employment took place during a period of peak telephone usage.* The 60,000 decrease in employment, a decrease of around 10 per cent, took place during a year when the number of telephones increased from 31.4 million to 33.4 million, when average daily telephone conversations increased from 125.3 million to 132 million. During the same year over a million people were waiting for telephone service and over 2½ million were waiting for better service; that is, waiting to go from party to individual lines. A period, in short, of good telephone business. However, the rate of increase in business began to level off as the general economy began to level off.

"This factor, coupled with intensified local and toll dial conversion programs of the Bell System and other telephone companies, decreased employment opportunities in the industry. We think also that the high cost of telephone service—that is, basic rates plus federal excise taxes—must have had some effect on the amount of telephone business and hence telephone jobs. While it is not possible to prove statistically, it seems only common sense to come to the conclusion that if certain types of telephone service were cheaper, particularly toll calls, many of us would use the telephone more often."

Foreign News

From TELEPHONY's Mexico correspondent.

In Mexico, insults, slander or misrepresentation of oneself by telephone is not a crime, because these deeds cannot be proven as Mexican law demands.

The Mexican Supreme Court so ruled in allowing Jose Lopez Portillo, resident of Mexico City, an appeal from a six months' jail sentence imposed by a lower tribunal.

Portillo was convicted of impersonating a government official when he telephoned a message to a court, ordering it to drop prosecution of a theft case.

The high court explained that telephoned insults, slanders and impersonations are after all, but the words of one person aaginst another. It held that identification of such offenders—as required by Mexican law—is always dubious. The reason is that there is neither written nor documental evident, or fingerprints, the whole matter being completely verbal.

The court added that any accusation against unidentified persons, or persons merely suspected of using telephones for such purposes, violates the Mexican constitutional guarantees for the individual.

* * *

Telefonos de Mexico, S.A., Mexico's major private telephone company, the Ministry of Communications & Public Works and the government-owned Pacific Railway have contracted to enable the railway to establish a telephone circuit early next year.

The circuit will be between Guadalajara, capital of far western Jalisco state and Mexico's second largest city, and Mazatlan, key Pacific port; and between Empalme, Sonora state railroad center in the northwest, and Nogales, across the border from Nogales, Ariz. It will allow dispatching of trains between those cities by two telephone channels, and by one teletype service.

The total installation cost is estimated at 6,450,000 pesos ($750,000) of which Telefonos will pay 600,000 pesos ($69,300). The Ministry and the Railway will pay the balance. As compensation for their financial aid, Telefonos and the Ministry can use this service whenever they desire.

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In these three books Dr. Walker gives us the fruit of a quarter century of experience as a craftsman, foreman, engineer, supervisor, conference leader and teacher in industry. Written in simple, straightforward English they have been recognized as outstanding manuals for training foremen and supervisors.

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lights on at dusk...
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No more lost revenue hours when the Ripley Light Watchman automatically turns phone booth light on at dusk, off in the morning. Easily seen from a distance, a lighted booth encourages the timid, especially women, who hesitate to enter a dark booth at night.
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Report Telephone Industry Record in Rate Cases

From a recent review made by Arthur Andersen & Co., a public accounting company, of the rate of return allowed in public utility rate cases, it is apparent that the telephone industry has not fared as well as other public utility enterprise, the United States Telephone Association recently reported.

The following data taken from the report is based on court and commission action in 903 rate cases from 1915 through 1952:

Utility	*No. of Cases*	*Rate of Return Allowed (%) Avg.*	*High*	*Low*
Electric	208	6.46	10.00	4.00
Gas	229	6.74	10.46	3.30
Telephone	239	6.09	8.50	2.00
Transportation	141	6.66	10.90	2.40
Water	86	6.59	8.00	3.66
Total.....	903	6.48	10.90	2.00

A check of the summary of decided cases involving Independent companies alone shows a high for them of 9 per cent, a low of 4.14 per cent and an average of 6.52—still lower than the average of any of the other utilities except electric companies, the USITA states.

Among the factors taken into consideration by rate-making bodies in determining what shall constitute a fair rate of return is the element of risk involved. When seeking higher rates utility companies emphasize the importance of this element. When making a public offering of securities to obtain needed funds for service improvement and expansion, companies naturally minimize this element.

On the basis of the foregoing figures, however, it looks as if commissions and courts have generally been less liberal with telephone companies than with other regulated industry, the USITA concludes.

V V

OBITUARIES

WILLIAM EUGENE SPARGER, 53, formerly of Mount Airy, N. C., died in Charlottesville, Va., on Aug. 8 following a heart attack.

He had been manager of the Mount Airy exchange of the Central Telephone Co., Charlottesville, for a number of years. At the time of his death he was auditor for Virginia Telephone & Telegraph Co., Charlottesville.

He was born on Nov. 10, 1899, in Surry County.

Mr. Sparger was a graduate of University of North Carolina.

Surviving are his widow, Mary Forbes Sparger; one daughter, Mary Lou Sparger of the home; two brothers, Collier B. Sparger of Scarsdale, N. Y., and Randall W. Sparger of Mount Airy; three sisters, Lillian Sparger of Washington, D. C.; Mrs. Conrad Siceloff of Mount Airy and Mrs. H. W. Richardson of Durham.

* * *

THOMAS D. OWEN, president and owner of the Ferndale (Pa.) Telephone Co., died on July 31.

* * *

C. W. STOKES, 67, superintendent for the Mankato (Minn.) Citizens Tele-

Shown above is the new 30-position automatic electric, largest in operation, toll switchboard which was placed in service at Norwalk, O., on July 11 by Northern Ohio Telephone Co. It replaced a 19-position switchboard. Included in the installation are all of the most modern features including "Key Sending" equipment. Norwalk is the largest toll center for Northern Ohio Telephone Co., handling long distance for its exchanges at Norwalk, Bellevue, Clyde, Willard, Huron, Milan, Monroeville, Greenwich, Berlin Heights, Clarksfield, Olena and Townsend, O. More than 100,000 toll calls originate from these exchanges each month.

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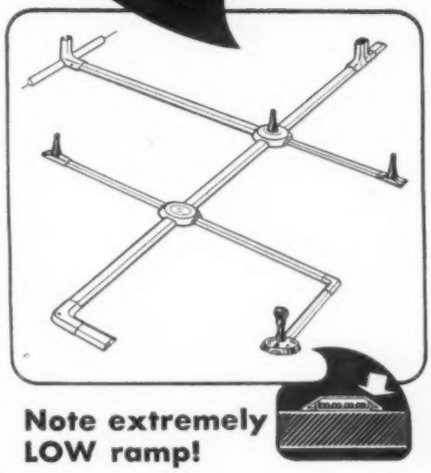

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LITTLETON, MASSACHUSETTS, U.S.A.

phone Co., died suddenly at his home Aug. 12.

Mr. Stokes was born on Sept. 21, 1885, in Smiths Mill. He went to Mankato in 1913, joining the Mankato company as a lineman. He has lived in Mankato ever since.

He had just returned there in June from a winter stay in Pomona, Cal., where he went for his health.

Mr. Stokes is survived by a daughter, Ada, now touring Europe, and a brother, Clarence, Council Bluffs, Iowa. Mrs. Stokes died in 1941.

V V

General of the Southwest Names Two New Staff Members

Two additions to the staff of the General Telephone Co. of the Southwest, Dallas, Tex., have been announced recently by the company's president, Walter G. Wright.

The new members are Don Hunsaker, vice president, and F. W. Hamper, personnel manager.

Mr. Hunsaker, who formerly was president of the San Angelo (Tex.)

DON HUNSAKER

Telephone Co., will be in charge of revenue requirements and public and employe relations. He assumed these vice presidential duties on Aug. 1.

The San Angelo company was purchased early this year by the General Telephone Corp. and will be transferred to General Telephone Co. of the Southwest in the near future.

Mr. Hunsaker served in the capacities of area manager for the Mountain States Telephone & Telegraph Co., and of district manager, district commercial superintendent and connecting company agent of Texas for the Southwestern Bell Telephone Co. prior to

F. W. HAMPER

1948 when he became president of the San Angelo company.

He also has been general manager for the Del Rio & Winter Garden Telephone Co., another subsidiary of Southwestern Bell, since 1948. General Telephone Co. of the Southwest recently purchased the Del Rio and Comstock exchanges from this company to integrate with the former San Angelo company.

Mr. Hamper will begin his new assignment on Oct. 1. He presently is general plant superintendent of the General Telephone Co. of Michigan, Muskegon. He also was connected with the General Telephone Co. of Indiana, Lafayette, as personnel manager.

Mr. Hamper, who is expected to move to Texas about the middle of September, will replace R. N. Taylor who is resigning.

V V

VandeVusse Named President of Illinois Telephone Co.

James F. VandeVusse, general manager of the Union Telephone Co., Owosso, Mich., has accepted the position as president of Illinois Telephone Co., Bloomington, Ill. He will assume his new duties on Sept. 1.

He will succeed H. H. Butler who recently resigned as president of the Illinois company.

Mr. VandeVusse has served as general manager of the Union company since September, 1949. For two years before that he was assistant general manager.

Prior to that he had been with Telephone Services, Inc., Ft. Wayne, Ind., for four and one-half years; and with the old Tri-County Telephone Co., South Haven, Mich., for 13 years.

The Union company and the Illinois

J. F. VANDEVUSSE

company are Gary Group telephone operating companies. Mr. VandeVusse has been associated with the Gary Group for the last 22 years in various supervisory and executive positions.

He has been active in Michigan association affairs, having served as vice president and treasurer of the Michigan Independent Telephone Association.

V V

Citizens of Tomorrow Learn Business Methods Today

Telephone company executives might well be interested in what other businesses are doing to insure competent personnel for their companies' futures. Quoted below is an article published by *Industrial News Review*, entitled "Short Course in Freedom":

"Free, competitive enterprise is the basis of our unequalled material wealth. It is also the basic principle of a system which puts no limits on the eco-

Answers to Traffic Questions on Page 52

(1) Yes, the connection should be split.

(2) The operator should say, "One moment, please?", establish the connection and request the deposit in the hearing of both parties.

(3) Please refer to the Preface for the answer to this question.

(4) Make two additional attempts at approximately 30 and 60 seconds before giving the NC report and releasing the customer.

(5) The TX should leave a circuit request indicating the proper precedence.

nomic or political achievements of the individual.

"Imparting to the youngsters of today an understanding of that system is essential to its preservation. Outstanding work is being done by Junior Achievement, a national organization which enables teenagers, with the help of older businessmen, to own and operate enterprises. Business organizations throughout the U. S., last year sponsored 1,266 Junior Achievement companies.

"For the past six years the New York Stock Exchange has presented an award to the outstanding Junior Achievement company of the year. This year, first prize for the best annual report of 1952 went to the Tasty Treat Co., a Chicago manufacturer of salad dressing, which was sponsored by Standard Oil Co. of Indiana. Its officers and directors were high school students ranging in age from 14 to 17. During the school year these young people, with the help of their advisors, organized and selected a name for the company, decided on a product and sold stock to 123 stockholders. Gross sales were $669.06 and the net profit was $88.55.

"In organizing and profitably operating their small enterprises, youngsters meet and solve problems similar in nature to those which face the biggest corporate enterprises. They learn the necessity for thoughtful planning, hard work and constant attention to detail in any successful business. They learn how stock ownership makes the savings of the people available for the use of productive enterprise. They come to realize that profits are essential if a company is to expand its operation and improve its product.

"In short, they learn what makes our free enterprise system work. Their knowledge will make them better citizens in the America of tomorrow."

V V

B.C. Telephone Plans Purchase

It is reported that British Columbia Telephone Co., Vancouver, has notified stockholders of a special meeting to be held on Aug. 27. A plan to purchase the Kootenay Telephone Co. Ltd., Cranbrook, will be considered.

V V

"One of the things we have to be thankful for is that we don't get as much government as we pay for."—CHARLES F. KETTERING, *Scientist.*

U. S. Commerce Group Offers Primer on Free Enterprise

Business men have an enormous thirst for greater understanding of the economic system which has made the United States the richest, most productive nation known to history.

This is the conclusion drawn by the Chamber of Commerce of the United States after studying response to its program to spread knowledge of basic free enterprise economics through planned, locally-operated study groups.

In only a few weeks and in the most discouraging type of weather, 35 groups swung into action or laid preliminary plans for study units later in the year.

To lay the foundation for such groups across the nation, the chamber's staff of economists prepared 17 pamphlets known as the Economics Primer. These booklets present economics not as a cure-all for problems but as a method of analysis, a way of breaking down a problem into its component parts and as a help to stating convincingly the implications of choices. Up to now, 2,100 sets of the primer have been sold.

Participants in the study groups will be able to use their training and talents to advance economic policies that will serve the nation and to provoke

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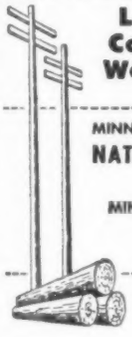
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interest in them in schools, college forums, civic clubs and women's organizations.

Three of the 35 groups at work are in universities—the University of Washington, Seattle, Wash.; Union University, Jackson, Tenn., and Baylor University, Waco, Tex. The General Electric Co. is one of the industrial giants which has started a study unit and its vice president, Lemuel R. Boulware, said:

"Beyond the courses, we should all study, write, speak, advertise and discuss economics. We will ruin the country irreparably, unless we adults can get some economic education quickly about money, inflation, taxes, incentives."

The chamber said that to start a study group, interested persons should invite business, civic and professional leaders to participate. Meetings should be held often enough to develop sustained interest. A practical schedule, the chamber has found, calls for weekly meetings for two-hour periods at lunch or in the late afternoon or early evenings. A business man skilled in economic analysis should be designated "Discussion Leader." Experience shows that 15 to 25 persons is the best size for a study unit.

The primer, available from the Chamber of Commerce of the United States, Washington 6, D. C., breaks down the field of economics into these parts:

The Mystery of Money; Control of the Money Supply; Money, Income and Jobs; The National Income and its Distribution; Progress and Prosperity; Sustaining Prosperity; Demand, Supply and Prices; Prices, Profits and Wages; Why the Business Man?; How Competitive Is the American Economy?; Understanding the Economic System and Its Functions; Spending and Taxing; Taxing, Spending and Debt Management; Labor and the American Economy; Individual and Group Security; International Trade, Investment and Commercial Policy and the Ethics of Capitalism.

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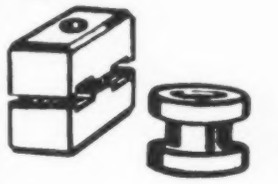
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